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USSR Report

AGRICULTURE

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LIVESTOCK FEED PROCUREMENT

ALFALFA SEED FARMING PROMOTED IN KIRGHIZ SSR

Progress, Problems of Cultivation

Frunze SOVETSKAYA KIRGIZIYA in Russian 24 Apr 84 p 3

/Article by A. Dotsenko, department head at the Kirghiz Scientific Production Association for Farming: "Unimaginative Operations -- The Enemy of Seed Production"/

/Text/ Kirghizia has been transformed into a large supplier of seed for the country's feed fields. In conformity with the tasks of the Food Program, an extensive network of farms has been created throughout the republic for specializing in the production of alfalfa seed. This year the spetskhozes /specialized farms/ will supply the all-union fund with more than 5,500 tons of such seed.

We have cultivated alfalfa for forage purposes for a long period of time and our farmers have not encountered any special difficulties in the technology employed for producing the forage bulk. But many such difficulties are still being encountered in the area of seed production. Analysis reveals that by no means are all of the kolkhozes and sovkhoses prepared for branch management on the basis of industrial methods. Many agronomists are in complete agreement with the scientific recommendations and yet they cannot seem to find the time to adapt them to the local conditions. On the other hand, there are those who continue to employ the old methods. In either case the farms fail to obtain the seed required and thus suffer losses.

Let us take that moment in the agricultural practices concerned with the periods for the formation and harvesting of the crop. In the southern part of the republic, for example, the scientists recommend that the alfalfa be left for seed purposes following the first cutting. Such was the procedure employed at the Yangi-Yul' Kolkhoz in Aravanskiy Rayon. But they had not taken into account the fact that the farm's soil cover was strongly saturated with humus, the ground water was close to the surface or that there is frequent precipitation in the spring. An abundance of moisture and heat accelerated the growing season and the plants lodged and became difficult to reach for the pollinating insects. The seed harvest per hectare amounted to only 0.6 quintals. The situation was the same at the neighboring Sovkhoz imeni Lenin, where an average of only 0.2 quintals of seed was obtained per hectare. However,

at the Syntash Kolkhoz in Issyk-Atinskiy Rayon the authorities took into account the peculiarities of the local fields and they followed the recommendations. As a result, they obtained sufficient seed.

Great harm is caused by the failure to use an imaginative approach in the work of protecting alfalfa against weeds, diseases and agricultural pests. The farmers' arsenal presently contains many different chemicals, the use of which is making it possible to maintain the crops in good condition. But is this formidable tool being used in the proper manner. Unfortunately, this is not always the case. Quite often the number of chemical treatments carried out on the crops is used as the indicator of fine work on the farms rather than the quality of such treatments. Such an approach has been observed in use at a number of kolkhozes and sovkhoses in Osh Oblast. Some seed tracts here are being treated five times against phytonomus. And this is being done only because the specialists did not respond in a timely manner to the biological forecast.

At the present time there are plant protection agronomists assigned to each seed production farm. However, quite often the specialists carry out whatever work pleases them, overlooking their principal obligations in the process. Lacking accurate data on the quantities and strain structure of the agricultural pests, the agricultural services commence covering the seed plants with chemical preparations, as was done for example at the Kolkhoz imeni Karl Marks in Kara-Suyskiy Rayon. But the results from such treatments were not very great. The phytonomus propagated and converted over to concealed feeding.

Meanwhile a simple and safe method for combating the phytonomus was found at the Kyzyl-Dzhar Sovkhoz in Dzhangli-Dzholskiy Rayon. By carrying out a cutting of the grass stand, the field crop growers deprived the pest of a feed base and suppressed its development.

"We cannot proceed in the absence of chemical preparations" stated the chief agronomist for the sovkhos G.I. Moskvina, "But they must be utilized intelligently and not harm useful insects, or we will be left without a crop."

One has no difficulty in agreeing with this opinion. Indeed the crude and unskilled use of chemical means in farming, the unsystematic grazing of cattle, the plowing up of barren land and the burning of vegetation along canals and roads tend to reduce sharply the numbers of useful pollinating insects. And this applies in particular to the southern zone of the republic.

The organization of protection for seed plants is not a simple task and in addition to retaining and multiplying the numbers of pollinating insects, importance is also attached to expanding the wide-row sowings of alfalfa. According to the chief agronomist at the Kolkhoz imeni Kochkorbayev in Issyk-Atinskiy Rayon G.T. Somov, it is easier to wage such a campaign using weeds, especially dodder. Even in the absence of chemical agents, it is possible to organize manual weed control operations, whereas this is impossible on extensive sowings. And whereas earlier an average of 0.32 quintals of seed was obtained by the farm from weedy tracts, a hectare of wide-row seed plants now produces 3 quintals.

Alfalfa seed production is gradually becoming one of our leading branches of farming. In developing it, importance is attached to ensuring that earlier mistakes are not repeated and that a new phytosanitary problem is not created. The withdrawal of tracts from old forage sowings for seed plant sowings is categorically forbidden and order must be restored in the mastering of crop rotation plans.

Increased intensification and the cultivation of alfalfa on the same tracts may bring about the appearance of the causative agent of root rot and the cyst-forming alfalfa nematode.

Kirghiz Agriculture Official Interviewed

Frunze SOVETSKAYA KIRGIZIYA in Russian 28 Apr 84 p 2

/Article: "For An Alfalfa Field"/

/Text/ Our republic is becoming a large supplier of alfalfa seed for a number of oblasts in the Russian Federation and the Baltic republics. Last year the kolkhozes and sovkhoses honorably fulfilled their international obligation and supplied the consumers with more seed than planned. This year they have vowed to produce 7,400 tons of seed and to supply the state with 5,500 tons.

Our correspondent V. Glaz'yev asked the 1st deputy minister of agriculture for the Kirghiz SSR, D.K. Zvyagintsev, the work being carried out by the seed growers in carrying out their obligations.

The seed growers are carrying out this year's sowing work with a sense of great personal responsibility. The words uttered by Comrade K.U. Chernenko during the All-Union Economic Conference on the Problems of the Agroindustrial Complex have found a place in their hearts: "Today we are confronted by an important task -- to achieve higher goals in the production of grain and technical crops and to supply the population with food products, particularly meat, milk, fruit and vegetables."

A further increase in the production of livestock products is directly dependent upon raising the cropping power of alfalfa seed. Alfalfa can without any exaggeration be referred to as the chief forage crop, one which furnishes high yields of protein-rich hay. Having fulfilled their international obligation in behalf of the country's fraternal union republics, our seed growers will undoubtedly make a worthy contribution towards the creation of a strong feed base and towards raising the productivity of the public herd.

And our alfalfa seed producers possess this potential. Over a brief interval of time, many of them mastered the progressive technology and learned how to obtain rich yields. For example, let us take the team headed by I.F. Zimina at the Krasnyy Oktyabr' Kolkhoz in Moscow Rayon. Last year, using the collective contract method, it obtained 4.8 quintals of alfalfa seed from each of 134 hectares. This was almost two times more than the amount called for in the

plan. Another team at the Kirghiz MIS /Machine Testing Station/, headed by V.A. Sovkov, obtained an average of 4.5 quintals of seed per hectare from an area of 50 hectares. A yield of 4 quintals was obtained by the team of V.I. Nikonov at the experimental farm of the Institute of Pastures and Feeds. Nor were these high indicators restricted only to leading collectives. The kolkhozes Druzhba in Sokulukskiy Rayon and Niva in Panfilovskiy Rayon and also the Kirghiz MIS exceeded their seed harvesting plans by a factor of 2-3.

Extensive use is being made of the experience accumulated by these and other farms during the spring sowing work. Prior to moving out onto the fields, special seminars were conducted for the purpose of acquainting the participants with the work methods employed by the leading workers and collectives. This experience was adopted by many kolkhozes and sovkhoses. The wide-row method of placing seed in the soil was generally recognized. This method is already being employed on 45,600 hectares. This year such sowings will be carried out on 23,700 hectares. The sowing plan has been fulfilled by more than 80 percent. And the farms in such rayons as Kemin'skiy, Chuyskiy, Issyk-Atinskiy, Kant'skiy and Kalininskiy have already completed sowing their alfalfa seed. The seed growers were able to complete this work in a rapid manner owing to the fact that during the autumn they not only plowed the land but they also levelled it off well. With the onset of the spring days, they covered over the moisture in the soil and immediately thereafter placed their sowing units in operation.

/Question/ But there are only a few such rayons in the republic. The majority of them have still not sown one half of their areas. What is the explanation for this?

/Answer/ Spring this year was very rainy. Certainly, complicated weather conditions impede the carrying out of field operations. But it would be wrong to blame the lag in the sowing work on the adverse weather conditions alone. In Osh Oblast, for example, no importance was attached to preparing the soil during the autumn and thus this work had to be carried out in the spring. And since spring turned out to be very unstable, the work was carried out in an extremely slow manner. During the month of April there were considerably more sunny days in this oblast than, for example, in the Chu River Valley. Nevertheless, the amount of sowing work carried out here was almost one and a half times less than the amount completed by the workers in the Chu River Valley.

The RAPO /rayon agroindustrial association/ leaders explain this by stating that rain falls frequently in the piedmont regions. Nevertheless, everyone is familiar with the fact that the piedmont region in the southern part of the republic differs very little from valley regions in terms of weather conditions. Another factor is at fault here -- poor organization of the work of the sowing units. Moreover, not all of the farms prepared quality-standardized seed in a timely manner. Such a reproach should be registered against the leaders and specialists on farms in Sokulukskiy and Moscow rayons. The crews of many sowing units are operating in one shift and the working time has not been planned in an efficient manner and thus they are unable to cope with the norms.

/Question/ Time is at a premium for the seed growers: they must carry out their sowing work more rapidly. But at the same time a requirement exists for

carrying out a complex of agrotechnical measures on the seed plant sowings of previous years. What can you say with regard to the carrying out of these measures?

/Answer/ Commencing with the very first days out on the fields, many farms organized thorough tending of the seed plants. Special attention was given to harrowing and gathering up the crop residues. It bears mentioning that these priority operations have been completed in almost all areas. With regard to the thinning out of the plants, a considerable portion of the sowings still remains crowded. In Talas Oblast, in particular, the sowings should have been thinned out last autumn. However the work was not carried out at that time, but rather postponed until spring. And now spring has arrived. The cultivators, chisel-cultivators (multiple-purpose) and LDG-5 shallow plows must be placed in operation and in this manner favorable conditions created for the development of the seed plants. But the farm leaders and specialists are still awaiting the arrival of good weather.

/Question/ The seed growers are convinced based upon their own experience of the effectiveness of applying a top dressing to the seed plants. Meanwhile, an application of mineral fertilizers is being held up and this can adversely affect the crop, especially on those fields which did not receive a full mineral fertilizer norm during autumn plowing in the year in which they were sown. Why is such a delay being tolerated?

/Answer/ The reason lies in insufficient equipment maneuvering and in miscalculations by the agronomists and engineers. The schedules developed by them called for the field work to be carried out in a consistent manner. But spring arrived late and brought rain with it. The time came when it was necessary to prepare the soil and carry out the sowing work simultaneously. Under these conditions it was necessary to reexamine the placement of the forces and resources and to organize double shift operations. Unfortunately, no efficiency was manifested. Today the work is being classified as being of priority or secondary importance. And it never occurred to some agronomists that they were risking the crop. But can we really tolerate a situation wherein, at a majority of the kolkhozes and sovkhoses in the Chu River Valley, a top dressing has been applied to the alfalfa seed plants on only one half of the area. The top dressing should be taken care of as rapidly as possible and the situation corrected, with attention being given to the use of boron-magnesium fertilizers.

At the same time, the alfalfa seed sowings must be protected against pests and diseases. Nineteen special stations have been created in the republic. All of them have been staffed with cadres of specialists. The collectives at these stations must constantly forecast the appearance of the pests and diseases, determine the degree of their distribution and implement measures aimed at preventing their reproduction.

In conclusion it should be stated that the rapid completion of the sowing of seed alfalfa and the carrying out of a complex of agrotechnical measures on the sowings of past years constitute a priority condition for obtaining a high yield and fulfilling the obligations in behalf of the fraternal republics.

Application of Industrial Technology

Moscow SEL'SKAYA ZHIZN' in Russian 10 Feb 84 p 1

/Article by I. Masaulov, Kirghiz SSR: "Thus Alfalfa Commences"/

/Text/ In 1983 the farms in Kirghizia achieved great success in the production of alfalfa seed. Against a plan calling for 2,500 tons, they shipped more than 5,000 tons to the union fund. In all, 6,100 tons of seed were procured.

Only 3 years have passed since that time when the republic began specializing in the production of alfalfa seed and delivering such seed to the union fund. But during this period the industrial technology and use of collective contracts have been introduced into operations on an extensive scale and a logistical base for seed production has been created and strengthened at 134 specialized farms. The construction of asphalted threshing floors, sheds and warehouses is continuing. Within a brief interval of time, the initial phases of two seed cleaning plants were introduced into operations -- in the Chu River Valley and in Osh Oblast.

When they are fully completed, and the plans call for this to be accomplished during this current year, the mentioned enterprises will be capable of preparing up to 5,000 tons of quality-standardized alfalfa seed annually. But this is a small amount. This is why the large seed production farms have created or are creating their own lines and, in some rayons, inter-farm points for the cleaning of alfalfa seed. Work is being carried out in connection with the breeding of new and more productive varieties.

Last year's crop in Kirghizia was prepared in a thorough manner. Recommendations were developed for the cultivation of seed plants in various zones of the republic; the leaders, specialists, machine operators and irrigation experts acquainted themselves in detail, during seminars, with the progressive technology employed for producing seed in wide-row sowings. The methods to be employed for pre-harvesting dessication, hay mowing and threshing were defined more precisely in advance.

The preparatory work fully proved its worth: a fine crop developed and the harvest work was carried out in an organized manner despite shortages in a number of machines. An average of 0.7 quintals of seed in excess of the plan was obtained in Uzgenskiy Rayon in Osh Oblast. The farm of the Kirghiz MIS /Machine Testing Station/ obtained three and a half quintals of quality-standardized seed per hectare. Excellent work was performed by the team headed by A. Chervyakov at the Krasnyy Oktyabr' Kolkhoz in Moscow Rayon -- it obtained almost 5 quintals of quality-standardized seed per hectare on the average from a wide-row sowing. Some of the better rayons in this regard were Moscow, Kalinin, Uzgenskiy, Sokulukskiy, Kantskiy and some others.

In previous years the cleaning of the seed to the required condition was dragged out until spring, even though the seed volumes were somewhat less. Last season the situation changed. The work is now being carried out in two and at times even in three shifts not only at the seed cleaning plants, but also on farms and at inter-farm points. The largest seed production farm in the republic -- the Rossiya Kolkhoz in Moscow Rayon -- prepared and sold to the state 195 tons of mainly 1st class seed using its own resources. The kolkhozes Krasnyy Oktyabr' and imeni Engels in this same rayon coped with their seed

processing work on a rapid basis and exceeded their sales plans. The Komintern Kolkhoz in Kalininskiy Rayon overfulfilled by twofold its raised task. The kolkhozes imeni XXI Parts"yezda in Sokulukskiy Rayon, imeni Lenin in Alamedinskiy Rayon, the sovkhoses Uzgen in Uzgenskiy Rayon and imeni Lenin in Issyk-Atinskiy Rayon and many others organized in an efficient manner the work of improving the seed to the required condition.

All of the alfalfa seed grown in Kirghizia is distinguished by a high germinative capacity, with a considerable portion being accepted as 1st class quality. Unfortunately, not all of the seed is absolutely clean. Quarantine weeds are causing considerable trouble -- dodder and Russian sweet-sultan. With great difficulty, success was achieved in eliminating dodder completely as a result of repeated cleaning work. The task of eliminating the Russian sweet-sultan was somewhat more complicated in that it is similar to alfalfa in size: even threefold passing of the seed through electromagnetic and other machines did not produce the desired result.

Some progress was finally achieved after an efficiency expert at the Ak-Su Sovkhoz in Moscow Rayon, V. Lemesko, designed a simple but rather effective device -- a steam generator. Using this unit the seed was moistened using steam instead of water. This did not lower the germinative capacity of the seed and the weeds were provided with a better covering of trifolin powder and sorted out on an electromagnetic machine. This innovation was rapidly introduced into operations on farms throughout the rayon and the processing of seed was accelerated. More than 900 tons of seed were sold to the state, or more than two times the amount called for in the plan. This steam generator is now being used in other rayons. The efficiency expert himself, V. Lemesko, together with a group of specialists, visited Osh Oblast, which was the first oblast to fall behind in its seed preparation rates. A marked improvement is now being noted in the work carried out there. At the farm of the Kirghiz MIS, instead of a plant device for moistening the seed when it passes through the electromagnetic machine, a sprayer has been installed. It forms a watery spray, improving the moistening and covering of the weeds with trifolin.

Unfortunately, repeated sorting not only increases the expenditures of labor, resources and time, but in addition it also causes greater damage to the seed, with a portion of the seed becoming unsuitable for use. How can this problem be resolved? The experience of leading workers reveals that a successful campaign can be waged against dodder and Russian sweet-sultan using agrotechnical measures and particularly on wide-row sowings. As a result of the use of such measures at the farm of the Kirghiz MIS, 3.5-4.5 quintals of quality-standardized seed per hectare are now being obtained. And if some kolkhozes and sovkhoses have failed to achieved the planned cropping power for the seed and tolerated a high degree of weediness, then the guilt for this situation rests mainly with their leaders and specialists. There have been cases in Chuyskiy and Keminskiy rayons where on some fields, even on those sown using the wide-row method, weeds have literally crowded out the alfalfa.

A high level of agricultural practices precludes the need for employing herbicides in all areas. They are used only for destroying individual concentrated areas of weeds. It is possible to eliminate all such areas -- everything depends upon the agronomist and upon his ability to utilize

scientific achievements and leading experience in actual practice. One important circumstance should be borne in mind: the fewer the chemicals used out on the fields, the less danger of destroying wild bees -- the pollinators of alfalfa.

Last year the tending of the seed tracts was complicated to a certain degree by the fact that the wide-row sowings were severely crowded. They had to be thinned out. Actually, the SO-4.2 vegetable sowing machines that were used sow twice as much alfalfa seed than is required by the technology. The specialists and machine operators believe that the cultivation of alfalfa seed requires the use of a special precision drill, one which will ensure a minimal expenditure of seed -- 2 kilograms per hectare. There is still another alternative -- to improve for alfalfa purposes the sowing unit of this same SO-4.2 sowing machine or to create a basically new sowing mechanism for it. It is obvious that this latter action would be the most efficient solution.

Last year a flaw was uncovered in the organization of seed production -- a shortage of sets of sieves used for cleaning the thrashed heap. The supply organs must take this fact into consideration. A desire has also been expressed to include a smooth sieve with openings 2.2 millimeters in diameter in the kit for the combine's grinding attachment and also to completely hermetically seal the combines at the plant. Concern must also be displayed in advance for propagation of the pollinating bees, with consideration being given to the increasing area of alfalfa seed sowings.

New Seed Drill Described

Moscow SEL'SKAYA ZHIZN' in Russian 16 May 84 p 2

/Article by B. Bubl's, chief engineer for VPO Soyuzpochvomash: "In Accordance With Requests By the Ministry of Agriculture"/

/Text/ The Soyuzpochvomash VPO /All-Union Industrial Association/, jointly with VISKhom /All-Union Scientific Research Institute of Agricultural Machinery/, has examined the article entitled "Thus Alfalfa Commences," published in the 10 February issue of the newspaper SEL'SKAYA ZHIZN'. Beyond any doubt, the problems raised are of an urgent nature. The USSR Ministry of Tractor and Agricultural Machine Building is undertaking measures aimed at removing them from the agenda.

At the present time, the Kirovograd PKI has created a new SUPO-6 vegetable precision sowing drill, the production of which is being arranged at the Kirovograd Krasnaya Zvezda Plant. This sowing machine has successfully passed its state testing, including for the sowing of alfalfa, and has demonstrated an advantage over the serially produced SO-4.2 sowing machine. The new sowing machine has a pneumatic sowing unit in keeping with the best foreign types.

Work is simultaneously proceeding in connection with raising the technical level of the SO-4.2 sowing machine. The association has issued an instruction calling for the development of a special unit for the sowing of alfalfa seed.

The industry is producing for the grain combines (in response to orders) attachments having sieves with oval openings for the sowing of alfalfa. The size of the openings -- 2.8 X 0.7 millimeters. The equipping of the machines with round openings 2.2 millimeters in diameter must be requested by USSR Minsel'khoz /Ministry of Agriculture/.

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LIVESTOCK

IMPROVING DAIRY HERD PRODUCTIVITY IN KAZAKH SSR

Milk Production Problems, Potential

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 1, Jan 84 pp 30-31

[Article by V. Savinov, director of the Department of Dairy Farming of the KaSSR Ministry of Agriculture: "More Production by Dairy Farms"]

[Text] In accepting great obligations, we call upon livestock farmers and all village workers in the republic to achieve a maximum increase in farm productivity during the winter period on the basis of a high organization of labor, of the effective use of feed and of a conscientious and creative attitude toward work. Let us extensively begin socialist competition for the steadfast growth in production and improvement in quality of meat, milk and other products and for the unconditional implementation of plans and socialist obligations in the 11th Five-Year Plan.

The above is from an appeal by agricultural workers of Ural Oblast to all collectives of kolkhozes and sovkhozes and to republic workers to complete the overwintering of cattle in an organized manner and to increase the production and procurement of livestock products during the 1983-1984 winter period.

The May 1982 Plenum of the CPSU Central Committee confirmed a broad program for the continued improvement of agricultural production during the 11th and 12th five-year plans. The thing of most importance remains the more complete satisfaction of the population's needs for food products and in particular for dairy products. Their consumption per capita is to increase to 330-340 kilograms by 1990. With a consideration of the growing needs of the republic's kolkhozes and sovkhozes milk production is to increase by 12 percent during this five-year plan. This is to be achieved by increasing the productivity of the dairy herd. In the enterprises of suburban zones, for example, milk yield per cow must be increased to 3,000-3,500 kilograms.

What is the situation today with regard to the dairy conveyor? The party and government have taken a series of measures to improve its work. Today we can speak about the fact that as a result of improvements in breeding in the

republic's sovkhozes and kolkhozes practically the entire herd of animals is pedigreed. New native breeds, combining the high productivity of hybrid animals with the adaptability of natives, have been developed at a rate heretofore unseen by means of absorbing and transformational crossbreeding.

Our republic occupies one of the leading places in the country with regard to the quantity of livestock and the delivery to the state of the basic types of animal products. During the last 10 years livestock raising has been developed significantly in many enterprises. In Alma-Ata Oblast the quantity of livestock increased by 49 percent, in Ural and Taldy-Kurgan oblasts--by 28 and in Aktyubinsk Oblast--by 27 percent. Productivity is also growing. The largest average milk yield per cow was achieved in the enterprises of Alma-Ata Oblast. It comprises 2,700-2,800 kilograms, including 3,232 kilograms in Talgarskiy Rayon, 3,008 in Iliyskiy, 2,957 in Kaskelenskiy and 2,955 in Enbekshikazakhskiy. Over 2,500 kilograms of milk per cow are produced in 16 rayons of the republic, in 210 sovkhozes and kolkhozes.

The best results were achieved in the Kamenskiy Breeding Plant of Alma-Ata Oblast. Here 4,400 kilograms and more of milk per cow are produced; in the Chimkent Experimental Station--4,312 kilograms, and in the Kolkhoz imeni 22 Parts'yezd of Dzhambul Oblast--4,233 kilograms. The mark of 4,000 kilograms of milk was surpassed by 346 operators of machine milking.

Other enterprises are also striving to achieve similar results. In connection with this considerable work is being done to strengthen the feed base and the proportion of feed crops within the structure of sowing areas is growing. Special attention is given to alfalfa, peas, soybeans, vetch and chick peas. Feed preparation is developing. Hundreds of feed shops have been built and are in operation and almost half of the feed is used only in prepared form.

But not all problems have yet been solved. Raising the effectiveness and stability of dairy farming means first of all securing model order on the farms of every kolkhoz and sovkhoz and achieving a high productivity in cows and a high profitability of milk.

This is what is being done in the Kolkhoz imeni Lenin of Shemonaikhinskiy Rayon of East Kazakhstan Oblast. The Simmental breed is raised here. During the 10th Five-Year Plan and in the first 2 years of the 11th plans were successfully fulfilled as regards the procurement of milk and meat; at the same time the size of the herd of cattle increased. The dairy productivity of cows increased from 2,729 to 3,370 kilograms. Almost all production is of the best quality.

In the achievement of these results a special role was played by the creation of a stable feed base and by improving the technology for feeding livestock. During the last 5 years dry-farming lands for perennial grasses and corn for silage increased by factors of 2 and 1.5 respectively. In 1978 for the first time sugar beets were sown for feed purposes on an area of 100 hectares. The introduction of progressive agrotechnology for cultivating these crops doubled their productivity; the cost of a quintal of hay decreased to 0.89 rubles. Inexpensive silage and beets are being produced. The procurement of feed per

standard head increased from 14 to 29 quintals of feed units and here the cost of one feed unit comprised 4.7 kopecks as compared with the planned 6.3 kopecks.

Considerable attention is also being focused on feed preparation. All straw and part of the hay are ground up in the course of the harvesting of grains and legumes. In each division dependable feed shops have been built, producing a total of 80 tons of mixtures daily. The feeding of feed in prepared form has allowed us not only to increase dairy productivity but also to decisively bring order to their efficient utilization. Thus, 370 grams of concentrates are expended per kilogram of milk, and total feed expenditures for the production of a quintal of milk comprised 1.3 quintals of feed units on the average for the last 5 years (as compared with the average republic indicator of 1.9).

The most intense attention is being given to increasing the productivity of the herd, to increasing gross animal production output and to decreasing its cost in the kolkhoz. Before the beginning of renovation of dairy farms directors and specialists set specific goals--to raise milk production to a qualitatively new and higher level in technological, organizational and economic plans. An analysis was made of existing drafts. As a result the essential solutions were found. Feed is distributed with the help of the KTU-10, which has a high operational dependability. Manure is removed by means of self-flotation from a longitudinal to a transverse canal with subsequent delivery into natural storage areas and then to farm fields. The cows are kept tethered in a cowshed with a divided floor. The short wooden part of the floor, 135 cm in length, allows the animals' hindquarters to extend over the slotted floor area located above the manure canal. This part of the floor is made up of a round smooth metallic rod 2.5 centimeters in diameter. There is a 3 centimeter space between rods. As a result the cow always remains clean and no manual labor at all is required to clean the stall of manure; traumatization of the udder and the hoof is practically eliminated. Cows are milked at the DA-100 installation with a capacity of 40-45. The balanced, shaft ventilation system in the facility provides a normal microclimate without heated air feed and without complex expensive equipment.

The building and renovation of livestock facilities proceeded in an economic manner, with the maximal use of local building materials. The cost per animal is only 300 rubles, or one-tenth the figure projected in the standard plan. Because of this amortization, deductions per quintal of milk do not exceed 1.5 rubles.

A comprehensive solution to all problems enabled us to sharply improve the economy of the kolkhoz in the shortest time and to significantly improve all indicators in dairy farming. In 1982, the kolkhoz produced a net income of 2.3 million rubles, including about 900,000 rubles from dairy farming. The cost of a quintal of milk comprised 16.05 rubles as compared to the planned 16.19, and the level of profitability was increased to 81 percent. Within amortization deductions--6, ongoing repairs--3 and other expenditures--21 percent of the total.

In effectiveness of capital investments, return on investments and level of profitability of milk the kolkhoz occupies first place in the republic. During the years of the 10th Five-Year Plan on the farms almost every cow and heifer over 2 years of age produced a calf; the survival rate averaged 98 percent.

The improvement of breeding work played an important part in the advance of dairy farming. An integral part of this was the intensive raising of replacement calves, increasing milk yield in controlled lots and the selection of the best primipara heifers to join the herd. Thanks to this the quality and pedigree composition of the herd increased rapidly. Whereas in 1976 there were 738 pure-bred and fourth generation animals and 1,213 higher than first class, in 1982 their number equalled 2,902 and 3,156 respectively.

In order to improve the economically useful characteristics of animals specialists from the kolkhoz perform a one-time addition of blood from one of the best combined breeds--the German Red Mottled. This enables us, while maintaining expenditures at past levels, to raise the dairy productivity of cows a minimum of 400-450 kilograms and to bring it up to 4,000 kilograms by 1985.

A great reserve for increasing milk production is the extensive introduction in sovkhoses and kolkhozes of the flow shop system, based on the experience of Lvov Oblast. It enables farmers to utilize the physiological peculiarities of cows during various period of lactation under the influence of purposeful feeding and upkeep; to conduct more thorough breeding-pedigree work; to clearly organize the reproduction of the herd; on the basis of the further division of labor to improve the training and to specifically determine the functions of farm workers, to organize their work day and to introduce two shift work; to organize the technologic service of the branch, to increase the role of specialists, to secure their direct influence on the objective solution to problems within the production cycle; and to introduce a comprehensive system of management of work quality and product quality at all stages of the production cycle.

Among the first to move to the flow shop system were the Kusepskiy Sovkhoz of Kokchetav Oblast, the Novosel'skiy and Uryupinskiy sovkhoses of Tselinograd Oblast, the Kolkhoz imeni Tel'man of Pavlodar Oblast, the Alma-Ata Kolkhoz of Alma-Ata Oblast and a number of others. Two years after the introduction of the innovation in the Novosel'skiy Sovkhoz the milk production of cows increased by 420 kilograms, each cow produced a calf, the cost of a quintal of milk decreased by 7 rubles and epizootic disease in calves dropped to a minimum.

This year the experience of Lvov Oblast has been introduced in 505 enterprises having 200,000 cows and by 1985 it is planned to complete the conversion of all kolkhozes and sovkhoses where circumstances will not hinder it.

In addition to the continued growth of the size of the herd, the significance and role of breed is becoming more and more important in increasing output.

At the present time the improvement of breeding and productive qualities of agricultural animals is becoming one of the decisive conditions for technical progress in livestock raising. The purposeful raising of replacement calves is very important. Most promising is the creation of large specialized enterprises such as the Kuybyshevskiy and Chistovskiy sovkhoses of North Kazakhstan Oblast and Novosel'skiy and Pervomayskiy sovkhoses of Tselinograd Oblast. On similar farms it is essential to complete work not only by the production of calves but also with an examination of productivity after the first lactation. Experience shows that this measure is economically very effective. It enables us to place the preparation of breeder cows for dairy complexes on a scientific base and to secure the physical development of animals that are suitable for use under conditions of industrial technology. In the aforementioned enterprises thanks to the intensive raising of calves they are inseminated at the age of 16-18 months when they weigh 320-340 kilograms. After the first calving they are usually an average of 26-27 months old and their productivity for the first lactation usually surpasses that of calves raised in non-specialized enterprises by 400-450 kilograms.

Scientific data confirms that the selection of cows for complex mechanized farms is of primary significance in the intensification of dairy farming. Especially important is an evaluation of the suitability of animals for mechanical milking using the Tandem and Yelochka (UDT-8 and UDYe-8) equipment. Preparations for this must be started with the crossbreeding of dairy cows available in enterprises and bulls of high productive breeds which meet the needs of the new technology. This is the fastest way to develop a better herd of breeder cows within dairy complexes.

Crossbreeding is the most effective means of combatting the degeneration of breeds and a method for rapidly restructuring them in accordance with new requirements. Deserving of serious attention and production evaluation is the possibility of developing a line of animals of the intensive dairy type in the Red Steppe, Alatau, Aleutian and Simmental breeds by crossbreeding with Red Danish, Angler, Ayrshire, Schwyz, Holstein-Friesian and Simmental breeds. As an example we can present the work of the Order of Lenin Alma-Atinskiy Sovkhoz of Alma-Ata Oblast. Since 1963 Alatau females have been bred with Jersey bulls here. Then the crossbreed heifers of the first generation were bred with bulls of the Ayrshire breed. All specialists-livestock farmers know that the Jersey and Ayrshire breeds are the leading dairy breeds not only according to fat content in milk and milk productivity but also with regard to a high degree of suitability to machine milking. As a result of such crossbreeding the sovkhos has developed a triple breed herd of 195 cows. They are superior to the original breeds in suitability for machine milking, are characterized by a rapid milk return and a better udder form. In 1982 here each cow produced 4,048 kilograms of milk with a fat content of 4.32 percent (compared to a base of 3.7).

In the sovkhos all facilities have the ADM-8 type of milking apparatus with low vacuuming systems installed. A milkmaid cares for 50 cows and has a 5-day work week. The best of these are N. Ya. Alistratova, A. F. Katsyubko, Z. I. Gordeyeva and N. N. Romanova, who annually produce 5,100-5,500 kilograms of milk per cow. In the enterprise milk production is the most profitable branch.

Each year clear profits from sales comprise about 1 million rubles, with a profitability level of 69 percent.

In developing such a highly productive herd sovkhos workers not only performed painstaking breeding work but also dealt with problems related to supplying animals with all types of feed and rations balanced in micro- and macro-elements. Deserving of credit in this are the former director of the sovkhos, Hero of Socialist Labor Petr Fedorovich Tomarovskiy and the current director, Candidate of Sciences Aleksey Trofimovich Boyko and all zooveterinary specialists.

Questions related to the transition of livestock raising to an industrial base are being dealt with where necessary in close conjunction with specialization and concentration. In the republic there are already 102 large complexes producing milk. Many of them fully justify themselves and have a considerable effect on supplying the population with livestock products. In the dairy complexes of the 40 Let Kazakhstana Kolkhoz of Alma-Ata Oblast, the Pobeda Kolkhoz of Chimkent Oblast and the Krasnoyarskiy Sovkhos of Tselinograd Oblast milk yield per cow has been increased to 3,200-3,400 kilograms. Here 90-99 calves are produced per 100 females and the profit level for milk equals 30-68 percent.

These examples speak convincingly about the fact that in each dairy enterprise there are great reserves for increasing the effectiveness of production output. At the same time we cannot help but note the serious problems and difficulties in dairy farming. Thus, many enterprises try to make up for the shortage of coarse and succulent feed with concentrates; a considerable number of animals have mastitis and are unsuitable for machine milking. Breeding work is not at the necessary level in some enterprises, there are shortcomings in the reproduction of the herd and in raising replacement calves, progressive methods of milk production are being introduced slowly and livestock diseases are widespread in a significant portion of dairy enterprises.

This is an intensive period for farm workers--overwintering is in progress. In preparing for it the republic's enterprises stockpiled a significant quantity of hay, haylage, silage and other forms of feed. It is important now to utilize them properly in order to preserve the high productivity of animals during the winter period, to produce a maximal quantity of milk and meat, to and to successfully fulfill the intensive socialist obligations of the fourth year of the five-year plan as emphasized in the resolution of the Kazakh SSR Central Committee and the republic's council of ministers concerning the carrying out of the current overwintering of livestock.

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Breeding Technology Discussed

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 3, Mar 84 pp 26-27

[Article by P. Nasipov, director of the Department of Dairy Farming of the Main Administration on Breeding in the Kazakh SSR Ministry of Agriculture and A. Kaliyev, main zootechnologist of the department: "Strengthening the Dairy Herd"]

[Text] The continued growth of milk production is one of the most important integral parts of the Food Program, which foresees increasing milk yield to 3,000 kilograms per cow in the near future, and in suburban areas--to 4,000. The republic's farm workers are persistently striving to reach this goal. Last year in comparison with the previous year they increased the productivity of cows an average of 27 kilograms. Now it is important to secure and develop the achieved pace of growth in milking and to improve the quality of production.

In the kolkhozes and sovkhoses of Alma-Ata Oblast each forage cow produced 2,664 kilograms of milk, Chimkent Oblast--2,167 kilograms and the enterprises of East Kazakhstan, Taldy-Kurgan and other oblasts surpassed the 2,000 kilo mark. The results are even better in many leading rayons, sovkhoses and kolkhozes. Many masters of machine milking produced an average per cow of 4,000 kilograms of milk and more. The achievements of leaders attests to the fact that in dairy farming there are extensive reserves which must be utilized more effectively everywhere in order to improve qualitative and quantitative results and to bring up lagging enterprises.

A good potential base for large milk yields has been created in the republic and continues to be developed. The best and most productive breeds of livestock are being introduced everywhere. However, their possibilities are not yet being fully utilized by far.

The practical experience of kolkhozes and sovkhoses shows that success is achieved in those places where breeding-pedigree work is closely coordinated with a high level of full-value feeding of agricultural animals. It was and remains the most important condition for raising the productivity of all types of livestock. But there is still a disproportion in the development of livestock raising and feed production. This is why directors and specialists must give priority attention to improving the nutritive value of feed, to improving procurement technology and to the proper storage and preparation of feed for feeding.

At the same time more and more significance is attached to the correct organization of breeding-pedigree work and of intensifying the reproduction of the herd with the maximal use of biological possibilities of the herd of female parents and high-quality bulls.

The artificial insemination of cows and heifers plays a considerable role in dealing with this objective. At the present time it has become important in terms of the large-scale qualitative transformation of populations or breeds of livestock.

Science and practice have proven that the greatest proportion of genetic progress--up to 76 percent--can be achieved by means only of the selection of bulls and 24 percent by means of cows. This is why there must be a more careful selection of sires.

In our republic there are 19 oblast state breeding stations. They have the possibility of supplying all enterprises with high-quality material for artificial insemination. Moreover, the bulls that they have at their disposal

come from mothers whose productivity is about 5,500 kilograms of milk. Such sires can have a positive effect on raising the dairy productivity of progeny. However, they are used to inseminate only 57 percent of the mating contingent. In the remainder of cases low-productivity sires are used. Sovkhozes and kolkhozes both are still not making enough effort to correct the existing situation. The following example is proof of this. In 1981 60 percent of the bulls acquired by enterprises had mothers whose milk yield reached 4,000 kilograms. They will not affect the future increase in milk yield because even today the potential milk productivity of the herd in any enterprise comprises 3,000-3,500 kilograms per year.

Large-scale breeding as one of the basic ways to transform populations or breeds as a whole requires constant and persistent work. It begins with the selection of the best cows--the future mothers of bulls. The productivity of these cows at the point of mature lactation must be no less than 5,000 kilograms of milk with a fat content no lower than 3.9-4 percent. They are assigned to highly productive bull-leaders which have been examined according to the quality of progeny and which are acknowledged to be upgraders of strains. At the beginning of last year there were not many more than 800 such cows in the republic and as a minimum 5,000 are needed. Where will we find the rest?

We have them. According to grading data, there are over 12,000 cows with a milk yield of over 4,000 kilograms. But the necessary continual work with them is not always conducted. They demonstrate this type of productivity under regular feeding and upkeep conditions. If they were to be properly milked and if abundant and balanced rations were supplied then milk yield would increase greatly.

This conclusion has been confirmed by the experience of numerous production leaders. We will present just one example. In the Kamenskiy Breeding Plant 28 cows which had calved three times or more increased their milk yield from 4,785 to 6,222 kilograms, an increase of 1,437 kilograms, during one year of milking with 305 days of lactation. Other enterprises can achieve similar results. The task, then, is to control these cows in particular, to correctly organize their milking and to establish their maximum productivity. In producing very valuable bulls as well as highly productive heifer, they will have a decisive influence on the transformation of the dairy herd.

It is essential to remember that only one-third of the bulls used are upgraders. This is why sires born of highly productive cows should be evaluated according to the quality of their progeny because some do not inherit their parents' characteristics. However, because of the poor organization of this aspect of work only about 140,000 cows are inseminated by bulls-upgraders. Of course we cannot tolerate this situation. The effectiveness and reliability of results from evaluating sires according to the quality of progeny must be perfected in accordance with today's needs. A number of organizational measures should be implemented in order to do this.

We need special farms--elevators--for raising bullocks. Here the issue of intentional couplings is raised according to a specific scheme of feeding and upkeep. The evaluation of sires as regards progeny is performed here. Their

daughters are maintained under optimal conditions and are milked in controlled yards.

Such elevators do exist in the country. Interesting results have been achieved, for example, in one of them--Kagarlyskiy in Kiev Oblast. Each year 130 bullocks are evaluated here. Expenditures for testing equal 100,000 rubles and the profits for supplementary production obtained from improving issue exceeds 700,000 rubles. These results enable similar enterprises to carry out their production-financial activities independently.

We do not yet have such elevators. However, it is planned to have 14 of them by 1985. Each year 1,400 bulls will be delivered there and 700 will be evaluated. But this objective is still being fulfilled slowly, the main reason for this being the economic underevaluation of planned measures.

Practical experience shows that their significance is very great. In addition, variants are possible. Experience proves that it is efficient to conduct evaluations of bulls for the quality of progeny in zonal elevators. With existing possibilities for storing and shipping bull semen to any distance, it is possible to organize only 4-5 elevators in the republic. For example, in Karaganda Oblast--for the Red Steppe breed, in Pavlodar Oblast--for the Simmental breed, in Alma-Ata Oblast--for the Alatau and in Chimkent Oblast--for the Aleutian breed of cattle. Significantly fewer capital investments and less time will be needed for building. A proper organization of their work and supplying them with concentrated feeds according to a centralized system will enable us to meet the needs of all enterprises in the republic with full-value materials for artificial insemination. This type of centralization will raise the breeding effect of work being done.

One of the roads toward the continued growth of productivity of the herd of female parents is inter-breed crossbreeding. With this goal in mind genetically-related breeds are used primarily. For example, the Red Steppe is combined with the Angler and the Red Danish; the Alatau--with the Schwyz; the Simmental--with the Monbel'yard, German Red Spotted, German Spotted, Bavarian Simmental and others; and the Aleutian--with the Holland and Holstein-Friesian. The rationale for this type of work is to supplement animals with characteristics that are non-existent or insufficiently developed--milk productivity, fat content in milk, live weight and so forth. At the same time it is possible to avoid a gross violation of the genetic structure of animals being upgraded. This type of work has been started in the republic and the first results speak of the correctness of the selected path. For example, heifers obtained from crossbreeding Red Steppe cows with Angler and Red Danish bulls produce 230-520 kilograms more milk than their pure-breed contemporaries. The fat content in milk also increases by 0.1-0.34 percent. Local cows of the Alatau breed developed from crossbreeding with Schwyz bulls surpass the productivity of their "pure" contemporaries by 244 kilograms during the first lactation, by 186 during the second and by 165 during the third, with a noticeable increase in the fat content of the milk. No less important is the fact that in half breeds of all breeds there is a significant improvement in the shape of the udder and in its suitability for machine milking.

For a long time the Alma-Ata Sovkhoz has been producing a highly productive breed of cattle that meets the needs of industrial technology by crossbreeding with Jersey and Ayrshire bulls. The results that have been achieved are promising. Triple breed mixtures in the first lactation produce 1,575 kilograms, in the second lactation--1,318 and in the third or over--1,264 kilograms more than pure breeds. In 1982 each of 1,950 cows in the sovkhaz produced 4,048 kilograms of milk with a fat content of 4.3 percent.

There have been similar achievements in other enterprises. In the Gigant Sovkhoz of Alma-Ata Oblast the Alatau-Ayrshire mixture produced 3,352 kilograms of milk with a fat content of 4.02 percent; in the Talgarskiy--2,800 kilograms with a fat content of 3.7 percent; and in the Baltabayskiy--2,392 kilograms of milk with a fat content of 3.9 percent from Ayrshire-Simmental mixtures during the first lactation. Thus, the advantage of inter-breed crossbreeding for increasing dairy productivity is apparent. However, it is essential to once again emphasize that crossbreeding alone without full-value feeding of crossbreeds will yield little. An effect is achieved in those places where a cow receives 45-50 quintals of feed units per year. This is why the overall strengthening of the feed base remains a most important task for the directors and specialists of enterprises.

It is essential to improve another direction in livestock raising. We know that in each new generation of female parents their genetic potential increases. But its full realization depends not only on abundant feeding after calving but also on proper and purposeful raising from the first days of life. This type of raising becomes more and more widespread with each year. In Alma-Ata Oblast alone in 1982 40 specialized intra-enterprise farms were created for the purposeful raising of heifers with a capacity of over 13,000 animals in 57 controlled cow sheds. Already, 17,000 primapara heifers have been prepared for calving and milking in them. Their average milk yield equals 2,938 kilograms, which is 362 kilograms more than the oblast average. Similar results have been achieved in other oblasts of the republic. In the Kolkhoz imeni 22 Parts'yezd of Dzhambul Oblast, for example, with directed feeding milk yield comprised 4,138 kilograms.

There are different examples. In the Sovkhoz imeni 23 Parts'yezd of Kaskelenskiy Rayon and the Sovkhoz imeni 18 Parts'yezd of Dzhambul Rayon in Alma-Ata Oblast the milk yield for primapara heifers comprised only 1,500-1,800 kilograms. This is because here attention is not given to directed raising although the technology for this is well-known. Its most important aspect is the organization of full-value feeding and the upkeep of calves according to a scheme that would guarantee a live weight of 320-340 kilograms at the time of mating, transfer them to controlled cowsheds 2-3 months prior to calving, assignment to milkmaids and during the milking period--feeding the types of rations that would facilitate a lactation peak at 45-70 days and thus, the best productive possibilities. In preparing calves for calving there must be priority concern for the development of the milk glands. This is achieved with the aid of massage of the udder. At the same time animals are accustomed to the noise of machines and mechanisms in the cowshed.

Primapara heifers prepared and milked in this way will produce 600-800 kilograms of milk more than their unprepared contemporaries. Controlled cowsheds enable us to select primapara heifers not only according to productivity but also according to strength of constitution and the morphophysiological properties of the udder.

Mastitis is a big problem in modern dairy farming. The majority of cows are predisposed to it. With mastitis on one-fourth of the udder milk yield decreases by 25 percent. The disease is inherited. This is why in no case can we retain in the herd bullocks born of cows which have a tendency to develop this disease, or transfer primapara heifers with an uneven udder or who have had mastitis several times into the main herd.

An important factor in increasing milk yield is the observance of zootechnical norms related to the duration of the dry and service periods. The untimely positive insemination of cows decreases their productivity by 25 percent. The dry period must last no more than 60 days. A period longer than this decreases milk yield by a quantity equalling the total average milk yield for the number of days of this portion of the lactation period missed. For these two reasons alone a significant quantity of production is lost. Thus, in the Aksay Breeding Plant of Alma-Ata Oblast the dry period for cows lasted 77 days and the service period--126 days. In the Peschanskiy Breeding Plant these indicators comprised 82 and 126 days. As a result in the former enterprise there was an underproduction of 300 tons of milk, or 368 kilograms per cow; in the second--410 tons, or 400 kilograms.

As before, a serious concern for zooveterinary specialists and directors of enterprises is the struggle against infectious diseases in livestock. Practical experience shows that highly productive animals are most susceptible to these. Protecting them from disease and strictly protecting farms from the bringing in of infection mean increasing the productivity of the dairy herd and more intensively utilizing mature cows.

Barrenness in cows also has a negative effect on the productivity of the dairy herd. This is why it is essential to constantly increase the output of calves and to introduce concentrated calving. In the final analysis this means not only additional milk yield but also additional beef.

As we can see, there are many ways to increase the productivity of the dairy herd. It is essential to more actively and broadly utilize them in all enterprises, which will enable the republic's livestock farmers to make a weightier contribution to the implementation of goals established by the country's Food Program.

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LIVESTOCK

FACTORS AFFECTING MEAT PRODUCTION AT INTER-FARM LIVESTOCK ENTERPRISES

Moscow VESTNIK STATISTIKI in Russian No 3, Mar 84 pp 22-30

/Article by B. Dubnov, deputy chief and G. Khodyakina, leading economist at the Administration for Agricultural Statistics of the USSR Central Statistical Administration: "On Efficiency of Meat Production at Inter-Farm Livestock Enterprises"/

/Text/ To intensify constantly the efforts of workers attached to the agroindustrial complex with regard to carrying out the USSR Food Program and raising the cropping power of the fields and the productivity of animal husbandry. To utilize more efficiently the resources allocated for agricultural development.

From a decree handed down during the December (1983) Plenum of the CPSU Central Committee

In light of the decisions handed down during the May (1982) Plenum of the CPSU Central Committee, which adopted the USSR Food Program, special urgency is attached to those problems concerned with specialization and concentration in agricultural production.

The gradual establishment of the production of certain types of agricultural products on an industrial basis is making it possible for the kolkhozes and sovkhoses -- the participants in cooperation -- to concentrate their efforts on a fewer number of branches, intensify their specialization, raise the degree of production concentration and thus increase the output of agricultural products and raise production efficiency.

Inter-farm cooperation in agricultural production, especially in animal husbandry, is on the whole characterized by greater economic efficiency than that found at kolkhozes and sovkhoses throughout the country. In order to study the efficiency of meat production at inter-farm livestock enterprises and also for ensuring their profitability and stable economic development, the Administration for Agricultural Statistics of the USSR TsSU /Central Statistical Administration/ carried out a special survey in 1983. Inter-farm livestock enterprises in all of the republics were included in this survey. The survey cards included indicators describing their production activity, interrelationships with participants in cooperation, groupings according to livestock concentrations, level of use of capabilities for meat production and so forth.

As of 1 January 1983, there were 983 inter-farm livestock enterprises (excluding poultry establishments) operating in the country -- 80 percent of the overall number of all inter-farm enterprises for the production of agricultural products. Since 1976, the number of such enterprises has increased by 24 percent.

The inter-farm livestock enterprises are distributed in the following manner according to their production specializations.

TABLE 1
Number of Inter-Farm Livestock Associations According To Their
Principal Production Specializations

| | 1976 | 1981 | 1982 |
|--|------|------|------|
| For the maturing and fattening of cattle | 305 | 323 | 343 |
| Swine breeding | 172 | 278 | 280 |
| For the maturing and fattening of several types of animals | 187 | 145 | 115 |
| For the specialized raising of non-calving young cows | 24 | 47 | 48 |
| For milk production | ... | 14 | 15 |
| Sheep breeding | 17 | 26 | 30 |
| Other (rabbit breeding, apiculture, pisciculture and others) | 86 | 146 | 152 |

The data furnished in the above table reveals that inter-farm cooperation has developed to the greatest degree in beef cattle husbandry and swine breeding. At the same time, cooperation in dairy cattle husbandry and sheep breeding has not developed on an extensive scale. Specialization is taking place within the inter-farm enterprises themselves. Thus the number of enterprises for the maturing and fattening of several types of animals in 1982 decreased by 39 percent compared to the figure for 1976, whereas the number of inter-farm enterprises working with one type of livestock increased.

More than one half of all of the inter-farm livestock enterprises are located in the RSFSR and the Ukraine (256 and 258 respectively), in Uzbekistan -- 101, Azerbaijan -- 66, Georgia -- 62 and in Moldavia -- 52.

The proportion of meat production by inter-farm enterprises is still not very high. Thus in 1982 this proportion for beef in the country's public sector amounted to 6 percent and for pork -- 9 percent. However, in some republics the meat production proportion for inter-farm enterprises is quite considerable. For example, in 1982 the beef proportion for inter-farm enterprises in Moldavia was 30 percent, pork -- 77 percent and in Kirghizia -- 36 percent and 15 percent respectively. In a number of administrative regions the inter-farm livestock enterprises are the principal producers of meat, with this meat being sold to the state in behalf of fulfillment of the plan for the participating farms. For example, the Mayak Inter-Farm Enterprise in Liskinskiy Rayon, Voronezh Oblast produces 72 percent of the overall volume of beef being produced in the rayon's public sector, the Shirvinta Inter-Farm Enterprise in Shirvintskiy Rayon in the Lithuanian SSR -- 78 percent of the pork and the Shchigrovskoye Inter-Farm Enterprise in Shchigrovskiy Rayon, Kursk Oblast -- 80 percent of the pork.

The logistical base for the inter-farm livestock enterprises is adequately high and continues to be developed further. In 1982 the value of the fixed productive capital of an agricultural nature increased by 50.9 million rubles compared to the figure for 1981, or by 2 percent, and amounted to 3 billion rubles, compared to only 1.4 billion rubles in 1975. In 1982 the proportion of fixed productive capital in animal husbandry compared to the overall value of the fixed productive capital of an agricultural nature was 66 percent.

In 1982 there were 130,200 individuals engaged in agricultural production at inter-farm enterprises, with approximately 80 percent of this number providing direct services for animal husbandry.

In 1982 the inter-farm livestock enterprises produced 1,077,800,000 rubles worth of gross agricultural output (in comparable 1973 prices), or 4 percent more than in 1981. Moreover, the proportion of animal husbandry output was 91 percent and this once again underscores the high level of specialization at the inter-farm livestock enterprises.

The production and sale of animal husbandry products at inter-farm livestock enterprises are characterized by the following data.

TABLE 2
Principal Indicators of Production Activity of Inter-Farm
Livestock Enterprises

| | 1981 | 1982 |
|---|--------|--------|
| Livestock supplied by participating farms for maturing and fattening, thousands of head | | |
| Cattle | 1639.9 | 1573.6 |
| Swine | 2095.4 | 2091.5 |
| Average weight of one head of livestock delivered for fattening, in kilograms | | |
| Cattle | 215 | 197 |
| Swine | 24 | 24 |
| Increase in weight obtained, in thousands of tons | | |
| Cattle | 266.4 | 260.4 |
| Swine | 320.2 | 345.6 |
| Average daily weight increase, in grams | | |
| Cattle | 478 | 486 |
| Swine | 253 | 281 |
| Livestock sold (live weight), in thousands of tons | | |
| Cattle | 589.0 | 541.4 |
| Swine | 381.2 | 391.5 |
| Average weight of one head of livestock sold (removed from fattening), in kilograms | | |
| Cattle | 361 | 362 |
| Swine | 95 | 107 |

For the country as a whole, the average annual number of cattle and swine at inter-farm livestock enterprises remained at the 1981 level. However, the number of livestock delivered by participating farms to inter-farm livestock

enterprises for maturing and fattening decreased by 4 percent in 1982 compared to 1981 and swine -- by 0.2 percent.

Some participants in cooperation are not carrying out their contractual obligations with regard to the turning over (sale) of livestock to the inter-farm enterprises for maturing and fattening. According to the survey data, in 1982 the participating farms in Ternopol Oblast undersupplied the inter-farm enterprises by 23,800 head (25 percent of the number called for in the contract) of cattle and in the Chuvash ASSR -- 27,800 head of swine (26 percent).

A more thorough study of the production process involved in the maturing and fattening of cattle at inter-farm livestock enterprises has revealed that some inter-farm livestock enterprises are accepting 10-12 day old young cattle stock for maturing and fattening and that in 1982 this caused a reduction in the average delivery weight per head.

In 1982 the average daily weight increase in cattle at inter-farm livestock enterprises remained roughly at the 1981 level, while the average daily weight increase in swine rose by 11 percent. In 1982 the average daily weight increase in cattle was 18 percent higher than the figure for kolkhozes and in the case of swine -- 39 percent higher. Somewhat of an increase took place in the average weight of one head of cattle (by 1 kilogram) and swine (by 12 kilograms) sold following fattening. In 1982 the inter-farm livestock enterprises sold 408,800 tons of meat from cattle which were in a high state of nourishment and heavy young stock (76 percent of all sales), or 6 percent more, and 288,100 tons of meat from 1st and 2d category swine (74 percent of all sales) -- 3 percent more than in 1981. Individual enterprises, for example the Ryzhavskoye enterprise in Cherkassy Oblast, sold all of its cattle in a high category of nourishment in 1982.

The principal operational indicator for a livestock enterprise is the average daily weight increase. The efficiency of meat production at inter-farm livestock enterprises, depending upon the average daily weight increase obtained, is apparent in the grouping shown in Table 3.

In the case of the group of enterprises having an average daily cattle weight increase in excess of 550 grams, the production cost per quintal of weight increase was lower by 34 percent, labor expenditures -- by 36 percent, feed consumption -- by 29 percent and the profitability level 18 points higher than the group of enterprises with a productivity of 550 grams. A similar trend has been observed at swine breeding enterprises. Here, for a group of enterprises having an average daily weight increase in excess of 350 grams, the production cost per quintal of weight increase was lower by 19 percent, labor expenditures -- by 38 percent, feed consumption -- by 25 percent and the profitability was considerably higher.

In 1982 the highest average daily weight increases in cattle were achieved at inter-farm enterprises in the Ukraine -- 620 grams, the Russian Federation -- 541 grams; and for swine in Lithuania -- 362 grams. Higher average daily weight increases were achieved in 1982 at individual inter-farm livestock enterprises. For example, an average daily weight increase in cattle of 803 grams was obtained at the Sadovskoye Inter-Farm Enterprise for Beef Production

in Aninskiy Rayon, Voronezh Oblast and at the Aleksandrovskoye Inter-Farm Enterprise for Pork Production in this same oblast the increase in swine weight was 443 grams.

The feed base is considered to be an important factor and one which affects the efficiency of livestock feeding operations. However, the level achieved in developing this base is still lagging behind the increasing requirements of animal husbandry. During the May (1982) Plenum of the CPSU Central Committee, it was mentioned that a shortage in feed is one of the principal factors holding back the rates of development for animal husbandry. It was also stated that insufficient attention is being given to increasing the production of coarse, succulent and green feeds.

TABLE 3

Grouping of Inter-Farm Livestock Enterprises According To Amount of Average Daily Weight Increase in Livestock During 1983

| Группы предприятий со среднесуточным привесом, г (1) | Удельный вес предприятий группы в общем числе, % (2) | Среднесуточный привес, г (3) | Получено привеса в расчете на одно предприятие, ц (4) | Себестоимость 1 ц привеса, руб. (5) | Затраты труда на 1 ц привеса, чел.-ч (6) | Расход кормов на 1 ц привеса, ц к. ед. (7) | Уровень рентабельности, убыточности (-), % (8) |
|---|---|---------------------------------|--|--|---|---|---|
| (9) Крупный рогатый скот | | | | | | | |
| (10) до 550 | 60 | 361 | 3 779 | 205,6 | 20,8 | 13,11 | 4 |
| (11) свыше 550 | 40 | 685 | 6 661 | 135,7 | 13,4 | 9,31 | 22 |
| (12) Свиный | | | | | | | |
| (13) до 350 | 70 | 265 | 7 160 | 157,7 | 12,5 | 7,92 | -4 |
| (14) свыше 350 | 30 | 412 | 12 664 | 127,8 | 7,8 | 5,97 | 17 |

Key:

- Enterprise groups according to average daily weight increase, in grams
- Proportion of enterprises of a group compared to overall number, in %
- Average daily weight increase, in grams
- Weight increase obtained per enterprise, in quintals
- Production cost per quintal of weight increase, in rubles
- Labor expenditures per quintal of weight increase, in man-hours
- Feed consumption per quintal of weight increase, in quintals of feed units
- Profitability level, unprofitableness (-), in %
- Cattle
- Up to 550
- More than 550
- Swine
- Up to 350
- More than 350

In 1982, 36 percent of the overall consumption of feed at inter-farm livestock enterprises was provided by their own feed base, 40 percent -- by participating farms and 24 percent was purchased on the side. In the feed structure for cattle, concentrated feed predominate at the inter-farm livestock enterprises -- 46 percent.

It bears mentioning that the inter-farm livestock enterprises are poorly supplied with lands for the production of feed. In 1982, the average per enterprise was 1,700 hectares and at specialized meat and dairy sovkhozes -- 13,000 hectares. At the same time, many inter-farm livestock enterprises are making very efficient use of the small feed lands at their disposal. Thus in 1982 the Shekinskoye Inter-farm Enterprise for the Fattening of Cattle in the Azerbaijan SSR obtained 58 quintals of feed units from each hectare of feed land.

Many kolkhozes and sovkhozes -- participants in cooperation -- are doing a poor job of supplying with feed the livestock turned over to them for maturing and fattening. In 1982 the participating farms should have supplied the Danilov Swine Breeding Enterprise in Orel Oblast with 41,000 tons of feed in conformity with a contract; the actual deliveries amounted to only 10,000 tons of feed.

In many instances the participating farms and inter-farm mixed feed plants are supplying low quality feed that has not been balanced in terms of nutritional value. For example, the Kelmentsy Inter-farm Enterprise for the Fattening of Cattle and Swine in Chernovtsy Oblast received feed from the Kelmentsy Inter-Farm Mixed Feed Plant in the form of granules (31,500 quintals), with the nutritional value of each kilogram being 0.44 feed units against a norm calling for 0.66 feed units, and the nutritional value of the mixed feed obtained from this plant amounted to 0.66-0.77 feed units, against a norm which called for 0.95-1.00 feed units.

The feed deficit is resulting in a systematic disruption in the contractual obligations at a number of inter-farm enterprises with regard to the duration of the fattening operations and the state of nourishment of the livestock delivered. For example, in accordance with its contract the Izobilnyy enterprise in Stavropol Kray should have fattened its cattle over a period of 568 days and turned them over to the state at an average weight per head of 420 kilograms. The cattle were actually fattened over a period of 875 days and turned over at a weight of 393 kilograms.

The examples cited confirm the importance of strengthening contractual discipline among the participants in cooperation, the observance of which is viewed as one factor affecting improvements in the efficiency of meat production.

In 1982 the average level of use of the capabilities for producing beef at inter-farm livestock enterprises was 80 percent, swine -- 68 percent. Compared to the planned capability, 42,000 tons of beef and 132,000 tons of pork were not delivered. The importance of making maximum use of production capabilities is illustrated in Table 4, where the inter-farm livestock enterprises are grouped according to the level of use of their production capabilities.

As borne out by the data furnished in the Table, at enterprises for the fattening and maturing of cattle having a level of use of production capabilities of 91 percent or higher, compared to a group of enterprises having a level of use of production capabilities of up to 75 percent, the beef produced per cattle billet is greater by 55 percent, the production cost per quintal of weight increase lower by 28 percent, labor expenditures -- by 17

percent and feed consumption -- by 22 percent; with regard to swine breeding enterprises and in connection with a group having a high use of production capabilities, the meat produced per cattle billet was 57 percent more, the production cost per quintal of weight increase lower by 18 percent, labor expenditures -- by 25 percent and feed consumption -- by 18 percent.

TABLE 4

Grouping of Inter-Farm Livestock Enterprises According To Level of Use of Meat Production Capabilities (products of growth) During 1982

| Группы предприятий по уровню использования мощностей по производству мяса, % | Удельный вес предприятий группы в общем числе, % | Средний процент использования мощностей по производству мяса | Получено продукции выращивания на одно скотоместо (живого веса), ц | Себестоимость 1 ц привеса, руб. | Затраты труда на 1 ц привеса, чел.-ч | Расход кормов на 1 ц привеса, ц к. ед. |
|--|--|--|--|---------------------------------|--------------------------------------|--|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| (8) Крупный рогатый скот | | | | | | |
| (9) до 75 | 50 | 44 | 1,14 | 199,8 | 18,8 | 12,74 |
| 76—90 | 18 | 83 | 1,61 | 148,4 | 14,7 | 10,13 |
| (10) 91 и выше | 32 | 105 | 1,77 | 144,1 | 15,6 | 9,98 |
| (11) Свиный | | | | | | |
| (9) до 75 | 59 | 51 | 0,70 | 157,6 | 11,8 | 7,64 |
| 76—90 | 12 | 83 | 0,94 | 139,4 | 10,0 | 7,45 |
| (10) 91 и выше | 29 | 109 | 1,10 | 129,8 | 8,8 | 6,30 |

Key:

1. Enterprise groups according to level of use of meat production capabilities, in %
2. Proportion of enterprises of a group compared to overall number, in %
3. Average percent of use of meat production capabilities
4. Products obtained from one cattle billet (live weight) in quintals
5. Production cost per quintal of weight increase, in rubles
6. Labor expenditures per quintal of weight increase, in man-hours
7. Feed consumption per quintal of weight increase, quintals of feed units
8. Cattle
9. Up to 75
10. 91 and higher
11. Swine

The production of meat at inter-farm livestock enterprises as a rule has higher economic indicators than at kolkhozes and specialized sovkhoses and this is apparent in the data shown in Table 5.

The fattening of livestock at inter-farm livestock enterprises is considerably more effective than that carried out at kolkhozes and sovkhoses and this is conditioned by the influence of the level of production concentration. At the same time, the survey data has shown that the most effective inter-farm enterprises are those where the level of production concentration is higher. This is borne out by the data furnished in Table 6 on groupings of inter-farm livestock enterprises according to the average annual number of livestock.

TABLE 5

Principal Indicators of Activities of Inter-Farm Livestock Enterprises,
Specialized Meat and Dairy Sovkhozes and Kolkhozes During 1982

| | (1) Крупный рогатый скот | | | (5) Свины | | |
|--|--|--------------------------------------|----------------|--|---------------------------------------|----------------|
| | межхозяй- ственные предприя- тия (2) | мясо-мо- лочные совхозы (3) | колхозы (4) | межхозяй- ственные предприя- тия (2) | свиновод- ческие совхозы (6) | колхозы (4) |
| (7) Получено привеса, ц в расчете: | . | . | . | . | . | . |
| (8) на 100 чел.-ч | 6,1 | 2,7 | 1,8 | 10,3 | 8,2 | 2,2 |
| (9) на 100 ц к. ед. . . . | 9,3 | 7,6 | 7,6 | 14,8 | 13,9 | 9,3 |
| (10) на 100 руб. затрат | 0,63 | 0,45 | 0,43 | 0,71 | 0,63 | 0,42 |
| (11) Уровень рентабельно- сти (убыточности «-») реализованного ско- та, % | 17 | 3 | -18 | 6 | 11 | -20 |

Key:

- | | |
|-----------------------------|---------------------------------------|
| 1. Cattle | 7. Weight increase obtained, quintals |
| 2. Inter-farm enterprises | per: |
| 3. Meat and dairy sovkhoses | 8. 100 man-hours |
| 4. Kolkhozes | 9. 100 quintals of feed units |
| 5. Swine | 10. 100 rubles of expenditure |
| 6. Swine breeding sovkhoses | 11. Level of profitability |
| | (unprofitability "-") of cattle |
| | sold, in % |

In Table 6, a greater return is realized from the feed consumed, the labor expenditures and production cost per quintal of weight increase are lower and the profitability level is higher in those groups having a maximum concentration of cattle (from 5,000 to 15,000 or more) and a greater number of swine (from 10,000 to 54,000 or more), compared to groups having up to 1,000 head or up to 3,000 head respectively.

The data furnished in Table 7 reveals that a high degree of technical equipping at the facilities promotes more efficient meat production at the inter-farm livestock enterprises.

The inter-farm livestock enterprises for the most part have completely mechanized processes at their disposal. The level of such mechanization at cattle husbandry enterprises in 1982 was 81 percent and at swine breeding facilities -- 94 percent (at sovkhoses -- 48 and 70 percent respectively and at kolkhozes -- 47 and 59 percent).

A high degree of production efficiency at a majority of the inter-farm livestock enterprises is conditioned by stable financial results. In particular, in 1982 (a difficult year for agriculture) these facilities realized 169.1 million rubles worth of profit. Of this amount, the inter-farm livestock enterprises allocated 36 percent for the participating farms, 11

percent for the participating sovkhoses, 16 percent for the fund for enterprise development and they set aside 17 percent for the repayment of loans. However, it bears mentioning that a portion of the inter-farm livestock enterprises, created in the absence of proper economic justification, are making poor use of the available material resources and production capabilities and are tolerating losses.

TABLE 6

Grouping of Inter-Farm Livestock Enterprises According To Average Annual Number of Livestock in 1982

| Группы предприятий со среднегодовым поголовьем скота, голов (1) | Удельный вес предприятий группы в общем числе, % (2) | Получено привеса на одно предприятие, ц (3) | Расход кормов на 1 ц привеса, ц ж. ед. (4) | Затраты труда на 1 ц привеса, чел.-ч (5) | Себестоимость 1 ц привеса, руб. (6) | Уровень рентабельности (убыточности) %, ← (7) |
|--|---|--|---|---|--|--|
| (8) Крупный рогатый скот | | | | | | |
| (9) до 1000 | 35 | 1 153 | 12,1 | 34,1 | 186,7 | 15 |
| (10) от 1000 до 5000 . . | 48 | 4 220 | 11,3 | 20,1 | 178,3 | 16 |
| (11) от 5000 до 15000 и выше | 17 | 14 673 | 10,7 | 11,4 | 161,6 | 17 |
| (12) Свиный | | | | | | |
| (13) до 3000 | 35 | 944 | 9,3 | 29,9 | 186,6 | -6 |
| (14) от 3000 до 10000 . | 37 | 7 606 | 7,4 | 11,6 | 161,6 | 0,3 |
| (15) от 10000 до 54000 и выше | 28 | 20 001 | 6,9 | 8,9 | 133,3 | 8 |

Key:

- | | |
|---|--|
| 1. Enterprise groups with average annual number of livestock, number of head | 6. Production cost per quintal of weight increase, in rubles |
| 2. Proportion of enterprises in group compared to overall number, in % | 7. Profitability level (unprofitability "-"), in % |
| 3. Weight increase obtained per enterprise, in quintals | 8. Cattle |
| 4. Feed consumption per quintal of weight increase, in quintals of feed units | 9. Up to 1,000 |
| 5. Labor expenditures per quintal of weight increase, in man-hours | 10. From 1,000 to 5,000 |
| | 11. From 5,000 to 15,000 and higher |
| | 12. Swine |
| | 13. Up to 3,000 |
| | 14. From 3,000 to 10,000 |
| | 15. From 10,000 to 54,000 and higher |

The results of the survey have shown that a majority of the inter-farm livestock enterprises, with a high level of production specialization and concentration at their disposal, are operating in an efficient manner. This is being promoted by well organized economic interrelationships among the participants in cooperation, by a high level of breeding work at the livestock supply farms. Efficient production at the inter-farm enterprises is having a positive effect on the economic development of those farms participating in cooperation.

TABLE 7

Capital-Labor Ratio and Power-Worker Ratio At Inter-Farm Livestock Enterprises in 1982

| | (1) В расчете на одного среднегодового работника | | |
|--|---|--|--|
| | основных производственных фондов сельскохозяйственного назначения, тыс. руб. (2) | энергетических мощностей, л. с. (3) | израсходовано электроэнергии на производственные нужды, тыс. кВт. (4) |
| (5) Все межхозяйственные животноводческие предприятия | 21,6 | 35,8 | 7,3 |
| (6) в том числе: | | | |
| (7) по доращиванию и откорму крупного рогатого скота | 19,4 | 35,8 | 4,0 |
| (8) свиноводческие | 30,7 | 46,2 | 14,7 |
| (9) по доращиванию и откорму нескольких видов животных | 20,8 | 31,9 | 7,1 |
| (10) Колхозы | 8,5 | 21,4 | 2,1 |
| (11) Совхозы | 12,2 | 32,0 | 4,0 |

Key:

- | | |
|---|---|
| 1. Per average annual worker | 5. All inter-farm livestock enterprises |
| 2. Fixed productive capital of an agricultural nature, in thousands of rubles | 6. Including: |
| 3. Power engineering capabilities, in horsepower | 7. For maturing and fattening of livestock |
| 4. Electric power consumed for production purposes, thousands of kilowatt-hours | 8. Swine breeding |
| | 9. For maturing and fattening of several types of animals |
| | 10. Kolkhozes |
| | 11. Sovkhoses |

With the creation of rayon and oblast agroindustrial associations, a considerable expansion took place in the opportunities for further developing inter-farm cooperation in agriculture, the importance of which was pointed out during the June (1983) Plenum of the CPSU Central Committee. Many RAPO /rayon agroindustrial associations/ councils/ are now devoting greater attention to the work of inter-farm enterprises. In the interest of further developing and improving the efficiency of inter-farm cooperation, they are outlining measures for eliminating unprofitable operations by individual inter-farm livestock enterprises.

More active work is being carried out in connection with solving those problems concerned with providing more complete support for the inter-farm livestock enterprises in the form of feed through more efficient use of the land assigned

to them. Methods are being outlined for improving the use of production capabilities.

Effective measures are being undertaken by the RAPO's aimed at improving the economic interrelationships among the inter-farm enterprises and the farms participating in cooperation. In the process, special attention is being given to the establishment of economically sound accounting prices for the livestock and feed.

In connection with the functioning of RAPO's, greater responsibility will be shown by the farms participating in cooperation in the administration of the inter-farm enterprises and they will also display greater interest in the results of the production-financial activities carried on by these enterprises.

At the same time, the RAPO councils must carry out active work aimed at introducing group forms for labor organization and wages at the inter-farm enterprises, the use of which makes each worker interested in the final production results.

The RAPO's must devote greater attention to the work being performed by the economic services at inter-farm livestock enterprises and to the economic-statistical analysis of the work of these enterprises being carried out by them, in the interest of uncovering reserves for increasing animal husbandry output and raising production efficiency.

The extensive development throughout the country of specialization and concentration in agricultural production has confronted the statistical organs with great and complicated tasks, mainly in the area of achieving improvements in the methodology and economic analysis of the processes of inter-farm cooperation in animal husbandry.

A more thorough study must be undertaken of those factors affecting the efficiency of meat production at inter-farm livestock enterprises; the problems concerned with output production costs, the level of labor productivity and the use of production capabilities, profitability and the distribution of profits must be analyzed thoroughly. In the area of economic analysis, more attention must be given to those problems concerned with the economic interrelationships of those participating in cooperation and also to the effect of inter-farm cooperation on the economies of participating farms.

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COORDINATION OF POULTRY PRODUCTION, PROCESSING DISCUSSED

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/Article by V.D. Goncharov, candidate of economic sciences and V.S. Svirkina, candidate of economic sciences at the All-Union Scientific Research Institute of Agricultural Economics: "All-Round Development for Production and Processing of Poultry"/

/Text/ In the decisions handed down during the 26th CPSU Congress, emphasis was placed upon the need for proportional and balanced development of the branches of the agroindustrial complex, improving economic relationships among them, organizing their efficient interaction in increasing the production of agricultural products and improving the preservation, transporting, processing and delivery of these products to the consumers.

In connection with improving the supply of food products for the population, great importance is being attached to the effective development of the production and processing of meat, including poultry meat.

The conversion of poultry production over to an industrial base and the creation of the USSR Ptitseprom /Administration of the Poultry Industry/ specialized system have promoted a considerable increase in the production of poultry meat and this has changed substantially the departmental distribution for processing the products. Earlier almost all of the poultry produced were delivered to poultry combines and meat combines having specialized departments for processing them. At the present time, the poultry is being processed at enterprises of USSR Minmyasomolprom /Ministry of the Meat and Dairy Industry/, USSR Minsel'khos /Ministry of Agriculture/ and Tsentrosoyuz /USSR Central Union of Consumer's Societies/. The overwhelming majority of poultry factories and associations specializing in the raising of poultry, especially broilers and ducks, and also large enterprises for the production of eggs, have departments for the processing of poultry. The production of poultry meat within the agricultural system is increasing at a rapid rate and at the present time amounts to more than one half of the overall production volume. During the 1976-1981 period, the enterprises of USSR Ptitseprom processed 50-56 percent of the poultry delivered for meat purposes. Most of the poultry (more than 90 percent) is processed at specialized poultry raising farms in the Kirghiz SSR and Armenian SSR and the least amount (20-37 percent) -- in the Estonian SSR, Turkmen SSR and the Azerbaijan SSR.

Commencing in November 1982, raised purchase prices were established for live poultry sold to the state by kolkhozes, sovkhoses and other agricultural enterprises and organizations and also by the population. As a result, the difference in price for example for supplying the state with broilers in live or dressed weight was reduced to 1 percent for semi-eviscerated carcasses and to 38 percent for eviscerated ones. The purchase prices for live poultry became uniform for almost all regions of the country (with the exception of the Georgian SSR). Such a price system must stimulate the agricultural enterprises and farms into increasing the production of goods and their processing at specialized enterprises of USSR Ptitseprom, USSR Minmyasomolprom and Tsentrosoyuz.

The new prices must play an important role in reorienting the processing of poultry at factories and at sovkhoses specializing in the production of eggs and having slaughtering departments. The principal workload at these enterprises occurs during the autumn period, that is, during the season devoted to the mass culling out of laying hens and completing the parental and industrial poultry flock. During the remaining period of the year, small batches of poultry are sent for slaughtering as low productivity hens are culled out. Ideally, such enterprises should supply the meat combines with live poultry.

In addition to large poultry factories, the hen processing departments also have relatively small farms. This is the result of imperfections in the production-economic relationships with the meat and poultry combines and in many instances it derives from the fact that the processing points are located at great distances from the poultry raising farms.

The inefficient use of equipment, material resources and labor within the poultry slaughtering departments raises the costs involved in processing the poultry. According to data supplied by the All-Union Scientific-Research and Technological Institute of Poultry Raising, a high degree of efficiency in the processing of poultry can only be achieved at large-scale poultry raising enterprises and associations that are capable of ensuring a full and uniform workload for the poultry processing departments. In particular, the continuous operation of a slaughtering line having a productivity of 1,000 head per hour can be achieved at poultry factories with a capability for handling no less than 2.5-3 million broilers and on egg production farms for no less than 1 million head of laying hens. Moreover, the coefficient of use for a slaughtering department will be 0.86-0.90, whereas at small poultry factories it is only 0.50-0.60.

In recent years the coefficient of use of the production capabilities of poultry slaughtering departments of USSR Ptitseprom has been 0.76-0.82, including for the Ukrainian SSR, Belorussian SSR and Lithuanian SSR -- 1.20-1.65 and in such republics as the Azerbaijan SSR, Georgian SSR, Armenian SSR and the Uzbek SSR -- 0.60-0.70. Such lack of uniformity has also been observed at poultry trusts in the RSFSR. For example, at poultry trusts in Kalinin, Kaluga, Kostroma, Smolensk and Yaroslavl oblasts, this coefficient equalled 1.0; Bryansk, Orel and Ryazan oblasts -- 1.15-1.33, Tula, Vladimir and Ivanovo oblasts -- 0.5-0.6 and in Moscow Oblast -- 0.8.

Poultry processing expenditures vary greatly. For USSR Ptitseprom as a whole, the level of such expenses in recent years has amounted to 110-140 rubles per ton of meat, for Ptitseprom in the Kirghiz and Turkmen SSR's -- more than 200 rubles, Kazakh SSR -- approximately 140 rubles. At the same time, this indicator in the RSFSR was 120-125 rubles and in the Baltic republics and the Belorussian SSR -- 100-110 rubles.

The level of expenditures for the processing of poultry is determined for the most part by the efficiency of use of the productive capabilities of the poultry slaughtering production operations. For example, when less than one half of the capabilities of the poultry slaughtering lines at the Bratsevskiy and Noginsk production associations of Ptitseprom for Moscow Oblast, which specialize in the production of eggs, was utilized, the expenses for the processing of 1 ton of poultry meat amounted to 130-177 rubles. When the slaughtering department of the Istro-Senezhskiy Production Association for the production of broilers had a full workload, these expenses amounted to only 79 rubles.

Analysis has shown that the expenses for processing poultry at enterprises of the USSR Minmyasomolprom are lower than those within the agricultural system, since at the former there is a higher level of production concentration and specialization and use is made of more modern technologies, equipment and labor means and methods.

Poultry which are not processed at the sites are delivered to meat and poultry combines. Definite farms are assigned to each of these enterprises. The production relationships between them are regulated by contractual agreements for the delivery and processing of poultry, with a breakdown by months. Such agreements are making it possible to ascertain in advance the tense work periods at the meat combines and, when necessary, to redistribute the poultry deliveries to other enterprises. This is making it possible to organize the rhythmic processing of poultry and to utilize more completely the production capabilities of the meat combines. For example, the coefficient for the rhythmic processing of poultry at meat combines in the Dagestan ASSR is 0.82-0.87 and prior to the creation of a specialized trust in the republic it was 0.30-0.40.

In some oblasts the planned tasks for poultry deliveries are furnished on a quarterly basis. This aggravates the seasonal nature of the work being carried out at the processing enterprises, since the farms strive to fulfill quarterly rather than monthly plans and all of the poultry are turned over at the end of the reporting period. This leads to the delivery of sub-standard poultry, thus increasing the production of sub-standard meat.

An analysis of the disposition of poultry processing enterprises over the past few years has shown that in a number of oblasts and krays throughout the country there is a high proportion of poultry meat production at enterprises of the USSR Minmyasomolprom. For example, in Pskov Oblast it amounts to more than 91 percent, in Ivanovo -- 88, in Kirov -- 83.6 and in Belgorod Oblast -- 81 percent of the overall production of poultry meat in the oblast.

In order to eliminate inefficient poultry shipments, the processing of the poultry must be coordinated at the enterprises of the various departments.

However, in a number of oblasts throughout the country the development of poultry processing enterprises is being carried out within the agricultural system without taking into account the locations of the meat and poultry combines. In this regard, an objective need exists for developing a single system for the long-range development and disposition of poultry processing enterprises regardless of their departmental subordination. This will ensure more complete utilization of their productive capabilities and reduce the expenditures required for transporting the poultry.

For the further development of the poultry processing branch, special importance is attached to establishing an efficient level of production concentration. This is explained by a considerable differentiation in poultry purchases by regions of the country. At the present time, poultry purchases are most high in the north Caucasus and Volga-Vyatsk regions of the RSFSR and in the Lithuanian, Latvian, Armenian and Moldavian SSR's and they are the lowest in the Volga and Urals regions of the RSFSR, Siberia and the Far East, in the Georgian and Azerbaijan SSR's, in the republics of Central Asia and in Kazakhstan. A requirement exists in this regard for differentiating the capabilities of the enterprises engaged in processing poultry, with the regional peculiarities being taken into account.

At the present time, the majority of the USSR Ptitseprom factories and associations are equipped with mechanized production lines with relatively low productivities -- 500-1,000 and 2,000 head per hour and developed for the production of poultry carcasses in semi-eviscerated form. Such equipment became obsolete and thus in 1981 all of the farms of USSR Ptitseprom converted over to the new poultry processing technology involving complete evisceration. However the introduction of this progressive technology is being held up by a shortage of specialized slaughtering lines having a productivity of 3,000-6,000 broilers per hour. In the future, all of the broiler, duck raising, poultry factories and associations must produce poultry in eviscerated form, either as whole carcasses, semi-carcasses or in quarters.

At the present time, a number of poultry factories in the Baltic, the Belorussian SSR, RSFSR, Kirghiz SSR, Tajik SSR and other republics have already converted over to the complete evisceration of poultry and to the production of soup types, semi-finished products and various types of canned goods made from poultry meat.

Not all of the poultry factories, poultry combines or meat combines are making efficient use of the waste products of production. This applies in particular to the poultry factories, some of which lack the departments required for processing the waste products. In order to achieve more complete and efficient use of the production waste products of the poultry processing branch, the capital investments should be redistributed among the allied branches of the agroindustrial complex in the interest of intensifying the production capabilities for the production of dry animal feed.

In the future, large-scale utilization plants and departments for processing the production waste products of poultry raising enterprises should be created at the poultry processing combines.

Many problems associated with developing and improving inter-branch relationships should be examined and resolved from the standpoint of rapid fulfillment of the Food Program. The relationships between the poultry raising farms and the processing enterprises must be strictly regulated on the basis of appropriate agreements, which include obligations concerning the schedules for delivering and accepting the poultry and the quality of the products during their production and processing. Based upon these agreements, the parties involved must bear definite property responsibility for a disruption in or non-fulfillment of individual points.

Thus, improvements in the production-economic relationships between the poultry processing branch and agriculture will make it possible to raise the efficiency of the country's food complex.

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REGIONAL DEVELOPMENT

MOLDAVIAN PARTY LEADER ADDRESSES REPUBLIC KOLKHOZ CONFERENCE

Kishinev SOVETSKAYA MOLDAVIYA in Russian 25 Mar 84 p 2

[Speech by S.K. Grossu, first secretary of the Moldavian Communist Party Central Committee, at the 4th Congress of Kolkhoz Workers of Moldavia on 23 March 1984: "Go Further, Achieve More"]

[Excerpts] Like previous higher forums of Moldavia's kolkhoz peasantry, the 4th Congress of Kolkhoz Workers is expected to play an important role in the further development of the kolkhoz system and in the resolution of social and economic problems in the rural area. And we should expect the measures outlined at the congress for stepping up the intensification of public production, perfecting management and strengthening discipline to help increase the contribution made by the kolkhozes and inter-farm enterprises to the realization of the Food Program and improve the lives of the rural workers.

Moldavia's kolkhozes have a glorious history. During the years of their existence they, along with the kolkhozes in the rest of the nation, have traveled a road from small, poorly developed agricultural artels to large, highly mechanized farms, developing production on the basis of scientific achievements, industrial technologies and industrial organization of labor.

The republic's kolkhoz system today consists of 362 kolkhozes, each of which has an average of 8.2 million rubles worth of fixed and circulating capital, around 114 inter-farm enterprises and organizations producing a profit of 110 million rubles. These are new agricultural workers with a socialist mentality, a high level of knowledge and vast vital interests. The kolkhozes and inter-farm enterprises presently account for around 55 percent of the gross output value for the republic's public sector. They produce 68 percent of the grain, 74 percent of the sunflower seeds, 55 percent of the vegetables, 65 percent of the fruits, 52 percent of the meat, 66 percent of the milk, 84 percent of the tobacco and almost all of the sugar beets.

The development of the kolkhoz system has been and continues to be based on Lenin's cooperative plan, which has undergone further development in party decisions. In the contemporary historical situation his ideas are most completely expressed by the nation's Food Program, which comprises the nucleus of the CPSU's agrarian policy. With respect to its scope, substance and strategic objectives this

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program constitutes a grand, profoundly humane and specific plan of struggle by the party and all the Soviet people for the accelerated improvement of agriculture's productive forces, the continued restructuring of rural life at a qualitatively new level, and the stable and reliable provision of the Soviet people with diversified and high-quality food products.

Implementing the Lenin cooperative plan and the party's modern agrarian policy, Moldavia's kolkhoz peasantry has worked out new production and economic relations conforming to the nature of the kolkhoz system, to the contemporary conditions for its development and the interests of the kolkhoz workers and of the state, and tested them at the practical level. These relations are based on inter-farm cooperation and agroindustrial integration, which were a precondition for the emergence of new management agencies--central and local kolkhoz councils, vested with administrative, management and economic functions in the management of the cooperative-kolkhoz sector of production.

The kolkhoz councils represent a higher level of kolkhoz democracy, one at which the limits of its influence upon intra-kolkhoz affairs are broadened significantly, on the one hand, and the strivings of all kolkhozes toward large-scale production concentration and specialization and toward its intensification, based on extensive cooperation and the adoption of industrial technologies, are intensified, on the other.

Socialized production operations and division of labor were stimulated considerably with their creation, planning and control of these processes have been achieved, the creation of inter-farm associations has been accelerated, their former dissociation from the kolkhozes has been ended, and possibilities for resolving production, economic and social problems in the rural area in a comprehensive manner have grown.

The kolkhoz councils have managed to substantially raise the level of socialization of the means of production and of material and financial resources. Around half of the capital investments in the republic's kolkhoz sector now go for the development of a base and production operations of a joint, inter-kolkhoz nature. The group framework of cooperative kolkhoz ownership has been expanded significantly as a result, and this is one of the most important conditions for its gradual equalization and merging with the state form of ownership.

Together with the boards of the kolkhozes and the inter-farm organizations, the kolkhoz councils are successfully resolving problems of planning and organizing production and making efficient use of land, equipment, capital investments and the work force, establishing well-based labor standards and perfecting the wage system, and bearing responsibility for the end results of production.

As a result of their purposive work the generation of gross income per unit of arable land has increased 29 percent in the sector, compared with the preceding five-year period, and total profits from sales of output have increased 1.5-fold. The effectiveness of public production has risen. Accumulations, which have grown as a result of improved management, as well as increased monetary payments to the kolkhozes and inter-farm associations for farm products sold to the

state, have permitted them to improve the material welfare of the kolkhoz workers and to expand the construction of social facilities.

As noted in the report and in the speeches by congress delegates, fairly good results have been achieved by farms in the Brichanskiy, Slobodzeyskiy, Orgeyevskiy, Kriulyanskiy, Suvorovskiy, Tarakliyskiy and certain other rayon kolkhoz councils. In the kolkhoz sector in Drokiyevskiy Rayon, for example, sales of milk and vegetables to the state have grown by 10 percent, sales of tobacco and fruits by 11 percent, and sales of sunflower seeds 3-fold, during the first 3 years of the current five-year period, compared with average annual production for the preceding five-year period.

The successes achieved by a number of rayons and many farms are a result of the constant attention given by the kolkhoz councils and boards to the matters of strengthening the material and technical base, improving the caliber of crop cultivation, utilizing the equipment, fertilizers and capacities of the livestock complexes, improving organization of labor, and strengthening labor and state discipline.

The rates of development for cooperative kolkhoz production are still far from completely meeting the demands set at the 26th party congress and the May 1982 Plenum of the CPSU Central Committee. In a number of places the material and technical base is poorly utilized, intensive growth factors and progressive forms of labor organization are being adopted too slowly, discipline is poor, and the proper purposiveness and creative approach are lacking.

As a result crop yields and livestock productivity are low on certain kolkhozes and in certain inter-farm organizations, and plans for the production and procurement of farm products are not fulfilled. The republic's cooperative kolkhoz sector has shorted the state by a total of 804 million rubles worth of products during the past 3 years.

Poor planning and performance discipline on the part of the personnel is the main cause of the breakdowns in the delivery of products to the state. Not all of the leaders and specialists handle the organization of measures to enhance output stability from each hectare of land with an adequate degree of responsibility. Not everywhere is real concern shown for the successful fulfillment of the tasks facing the farms.

And where the sense of responsibility has fallen, plans are not fulfilled. Kolkhozes and inter-farm enterprises of the Rezinskiy Rayon Kolkhoz Council, for example, have fulfilled the plan for gross output for the first 3 years of the five-year period by only 72 percent. The state was shorted by 6,500 tons of grain, 73,000 tons of sugar beets, 3,500 tons of meat, 3,700 tons of milk, and a lot of other products.

During that period farms of the Teleneshtskiy Rayon Kolkhoz Council produced 16 percent less from the crop cultivation and livestock operations than the annual average for the 10th five-year period. The production plan was not fulfilled for any of the branches. The plan for sales of grain to the state was fulfilled by only 64 percent, sunflower seeds--77 percent, sugar beets--53 percent, fruits--34 percent, meat--61 percent, and milk--88 percent.

For motives of prestige the leaders and specialists of certain farms are actively developing one, two or three branches. The others receive less attention, although they also have orders from the state. This is having a negative effect upon farm economics, of course, retarding growth rates for production and procurement, and doing considerable damage to the cause of indoctrinating the personnel.

For a number of years the crop farmers of Chadyr-Lungskiy Rayon engaged intensively in corn production and achieved fairly good results. At the same time they dropped back in the production of sunflower seeds, milk and meat. The successes achieved by the Glodyanskiy kolkhoz workers in the cultivation of sunflowers have been noted repeatedly in the republic, but they have fallen considerably behind plan assignments with respect to the production of sugar beets, fruits, meat and milk. Growth rates for tobacco production have grown markedly during the years of the 11th Five-Year Plan in Lazovskiy Rayon, while it has begun regularly failing to fulfill plans for sales of sugar beets, sunflowers and livestock products to the state.

The kolkhoz councils bear direct responsibility for these and other deficiencies in the work of the personnel, and for nonfulfillment of plans for production and sales of output to the state. They are poorly utilizing their economic and organizational possibilities for implementing the Food Program, they do not always assure smooth and effective management in all subdivisions of the cooperative kolkhoz sector, and are slow in eliminating such deficiencies as bureaucratic administration, unnecessary regulation and petty patronage of the kolkhozes.

This was pointed out at the 12th Plenum of the Moldavian Communist Party Central Committee. It acknowledged that the criticism contained in the decree passed by the CPSU Central Committee on the report from the Moldavian Communist Party Central Committee about the slowness with which decisions coming out of the May 1982 Plenum of the CPSU Central Committee were being fulfilled was justified and stated that the Kolkhoz Council of the Moldavian SSR had still not reorganized its work in the spirit of demands set by the party, that it was doing little to improve management, was not being sufficiently demanding of the personnel with respect to observing planning discipline and was doing little to help the rayon kolkhoz councils perform their production management functions.

As a result of inadequate monitoring on the part of the Central organization of the Moldavian SSR Kolkhoz Council the Telenshtskiy, Kaushanskiy, Kotovskiy and a number of other rayon kolkhoz councils have disassociated themselves from the vital organizational work, are not adequately considering the needs and requests of the farms and have turned their specialists from production organizers into compilers of various reports.

Certain kolkhoz councils, including the Lazovskiy, Kotovskiy, Ryshkanskiy, Leovskiy and Glodyanskiy councils, are disregarding the work of the inter-farm enterprises, not monitoring their observance of contractual relations with the kolkhozes, not properly assessing infringements upon their interests and unsatisfactorily dealing with questions of making better use of the possibilities of the inter-farm organizations for strengthening the economic situation and resolving social problems of the kolkhozes.

We need to significantly improve the work of the kolkhoz councils in the spirit of demands set in the decree passed by the CPSU Central Committee on the report from the Moldavian Communist Party Central Committee, thoroughly consider the matter of reducing the number of intermediate administrative bodies and eliminating duplication in the work, precisely define interrelations among branch subdivisions at the rayon level, strengthen the economic independence of the kolkhozes, increase the responsibility and discipline of the personnel, and prevent liberalism and laxity with respect to workers who are coping poorly with their duties.

The main attention of republic and rayon kolkhoz councils must focus on enhancing effectiveness in the use of the existing production and scientific and technological capability, material and financial resources, and assuring absolute fulfillment of plans for the production and procurement of products from crop cultivation and animal husbandry. We must develop all branches of the agrarian sector on the farms and in the rayons in a focused and highly responsible manner, regardless of their volumes or areas of specialization. Only this approach assures the steady improvement of agriculture and the fulfillment of state orders for all types of products.

We know that in order to achieve reliable stability in the development of crop cultivation and animal husbandry we must make efficient use of the land, increase its fertility, use a highly effective structure of crop areas and scientifically based crop rotation, organize the seed production and breeding work well, and extensively employ industrial technologies in all the branches.

Experience has shown that where these important demands are observed, the crop yields and livestock productivity are ordinarily high, and gross production and sales of output to the state steadily increase. Farms of Brichanskiy, Oknitskiy, Kriulyanskiy and Yedinetskiy rayons obtained 40-45 quintals of grain per hectare last year, for example.

There are still numerous kolkhozes, however, on which the agricultural practices employed in crop cultivation are at a low level, crop rotations are poorly mastered, technological requirements are violated, and labor organization is not at the proper level. They achieve corresponding results. Kolkhozes in Glodyanskiy and Floreshtski rayons harvested only 26-29 quintals of grain per hectare last year, for example. A similar situation exists in all branches of crop cultivation.

By the end of the current five-year period the kolkhozes and inter-farm enterprises must increase gross grain yields by 38 percent, sugar beets by 35, and grapes by 29 percent, compared with the actual figures for 1983. Converted to yields, this means that they need to obtain 36 quintals of grain, 324 quintals of sugar beets, at least 20 quintals of sunflower seeds, 18 quintals of tobacco, 170 quintals of vegetables, 91 quintals of fruits and 67.4 quintals of grapes per hectare.

In order to implement this program we need to improve the zonal crop cultivation system more persistently, universally assimilate intensive, specialized crop rotations, consolidate the optimal structure of planted areas developed in recent years, considerably improve the application of achievements of scientific and technological progress, accelerate the adoption of highly productive new varieties and hybrids, and improve the professional level of the rural workers.

Comrade Grossu then dealt in detail with matters pertaining to the agricultural practices employed for cultivating all the main crops.

He stated that for crop cultivation as a whole our task is one of working with greater persistence to develop each branch and enhance production effectiveness, and doing everything necessary to see that plans set for raising and procuring products from crop cultivation are consistently fulfilled.

The extensive adoption and correct employment of industrial technologies constitutes an important reserve for the successful realization of the Food Program by the kolkhoz councils. The machine operators have a crucial role in this matter. As we know, rayon inter-farm mechanization and electrification associations have been functioning in the republic for almost 10 years now. During that period they have demonstrated themselves to be an effective organizational, agronomic and technical system for utilizing the machinery. The shift output per tractor and the seasonal output per grain combine have grown significantly, total outlays for equipment maintenance and repair have been reduced, order has been established in the situation with respect to orders for the equipment, a significant saving of fuel and other supplies has been achieved, working conditions for the machine operators have been changed and their wages have increased. And something very important--the farms' possibilities for adopting the achievements of scientific and technological progress have been made more equal. While giving good overall marks to the mechanization and electrification associations, we cannot ignore the deficiencies still existing in their work. We need to turn our attention to the fact that production and economic relations between the associations and the kolkhozes have still not been thoroughly coordinated and certain organizational matters have not been fully resolved, and to instances of serious violations of contractual obligations and inferior performance of agricultural operations.

The efforts of the kolkhoz councils and the leaders of associations and kolkhoz boards should focus on rapidly correcting these and other deficiencies in the work of the mechanization and electrification associations, perfecting the economic principles underlying their functioning, and eliminating barriers to the full realization of possibilities for utilizing the production means which have been collectivized on a cooperative basis.

The mechanization associations and all the kolkhozes need to improve effectiveness in the employment of industrial technologies for cultivating agricultural crops. Last year yields differed by only 20 quintals for conventionally cultivated sugar beets and those grown with industrial technology on farms of the cooperative kolkhoz system. This sort of thing must not occur in the future.

Improving the use of possibilities for employing chemical means and for irrigated crop cultivation is also among the most important conditions for intensifying agricultural production. The kolkhoz councils, along with the Moldsel'khozkhimiya Association, are required to prevent deviations from the principles and rules worked out by science for the application of mineral fertilizers and to make their application more effective. The technology for producing, storing and using organic fertilizers also needs to be significantly improved. Volumes of organic fertilizers applied to the soil need to be increased.

Despite the exceptional importance of irrigation in our conditions, a number of kolkhozes and inter-farm associations are not taking the steps necessary for the maximum involvement of existing irrigation systems in production and are not observing scientifically based irrigation schedules and rates and other requirements of good agricultural practices for irrigated crop cultivation. It is therefore not surprising that yields of grain and other crops are practically no higher than yields from dry-land farming on a number of farms in Kaushanskiy, Kagul'skiy, Nisporenskiy and Dondyushanskiy rayons. We must fundamentally change the situation in irrigated crop cultivation, significantly raise the general level of agricultural practices, make more extensive use of intensive technologies for irrigated crop cultivation and achieve the maximum return from each irrigated hectare.

The cooperative kolkhoz sector has a powerful material and technical base for animal husbandry. Good calf and pig fattening complexes have been built, inter-farm enterprises for raising heifers, capacities for the production and processing of feed are being expanded, and purposive work is being performed to upgrade the herd. All of this has made it possible to considerably increase the production of milk, meat and other products from animal husbandry during the years the kolkhoz councils have been functioning. Consistently high rates of growth for their production and procurement have been established, the branch as a whole has been made more effective, and outlays of labor and feed per unit produced have been drastically reduced.

Kolkhozes in Grigoriopolskiy, Kriulyanskiy, Suvorovskiy and other rayon kolkhoz councils are achieving high rates of development in meat production. They have increased meat sales by 16-37 percent during the first 3 years of the current five-year plan, compared with the average annual level for the preceding five-year period. In the dairy branch good successes have been achieved by the Brichanskiy, Oknitskiy and Slobodzeyskiy livestock farmers. They fulfilled the plan for sales of milk to the state during the first 3 years of the five-year period. They obtained 3,300-3,700 kilograms per cow last year.

Existing possibilities for building up the output of livestock products are still not being fully applied, however. Suffice it to say that capacities for around 15,000 animals stand idle for various reasons each year, which produces a shortfall of almost 2,600 tons of weight gain.

The livestock complexes operate poorly and livestock productivity is low in a number of rayons. In Glodyanskiy Rayon, for example, inter-farm enterprises have reduced meat production volumes almost 2-fold compared with the 10th five-year period. Average daily weight gains were only 259 grams for calves and 296 grams for fattened hogs there last year. Production volumes have also dropped considerably in the complexes in Lazovskiy, Ryshkanskiy, Kamenskiy and other rayons.

The causes of the poor operation of a number of beef production complexes have been discussed repeatedly. Today I would like to direct your attention to the fact that this is frequently compensated for by holding the animals on the farms too long, as a result of which the very productive growth vigor of the animals is poorly utilized. This results in the use of excessive feed per unit of weight gain, causes the livestock to be fattened too long and reduces their selling weight.

The republic kolkhoz council should give considerably more attention to beef production, correct deficiencies in branch development and increase average daily weight gains for cattle to 800 grams and the selling weight per head to at least 420-450 kilograms, thereby obtaining 95,000-100,000 tons of beef annually.

The kolkhozes and inter-farm enterprises should do a better job of producing pork. We cannot accept as normal the situation in which pork production volumes are increasing slowly. Average weight gains for hogs are considerably below the planned figures, and production costs continue to be high. During the first 3 years of the current five-year period pork procurement plans were not fulfilled once by the cooperative kolkhoz sector as a whole. The republic kolkhoz council and the farm leaders and specialists should fundamentally alter their handling of development of pork production. They must precisely organize the work of the complexes, rapidly bring them up to rated capacity, increase weight gains to 550-600 grams and assure the production of at least 150 kilograms of pork per head and a production volume of up to 80,000 tons in the complexes annually. In order to achieve this the concentration of pork production in the complexes must be completed within the next 2 to 3 years in the rayons where the lag has been allowed to develop.

The kolkhozes and inter-farm enterprises have some large tasks to accomplish in the development of dairy farming. The herd which exists in the kolkhoz sector, the work being performed to upgrade the dairy herd, the increased volumes of feed preparation and the improved quality of the feed make it possible to universally and systematically raise the productivity of the animals and increase milk production. These factors are being poorly utilized on many kolkhozes, however, as a result of which the output from the cows is lower in the cooperative kolkhoz sector than the republic average. It barely reaches 2,620-2,670 kilograms in farms in Kaushanskiy and Nisporenskiy rayons.

In order to rapidly rectify the situation in dairy farming we must significantly improve the raising of heifers in the inter-farm complexes, conduct a determined struggle against barrenness in the cows and for the efficient use of feed, and give greater attention to the livestock management work. We need to increase the milk yield to 3,500 kilograms per cow. Comrade Grossu then discussed in detail what has to be done to accomplish this task.

The results of last year and the first months of this year, he said, permit us to state that perceptable changes have occurred in animal husbandry and that output plans for the 4th year of the five-year period will be fulfilled by the branch. In order to achieve this, however, we must consolidate those good results achieved by many rayons and farms in the development of meat and dairy farming, correct existing deficiencies and omissions of an organizational and technical nature, and bring the lagging units up to the level of those out front.

It is especially important in this matter to continue the work of strengthening the feed base, intensifying cultivation in the feed production area, improving the quality of the feed and making efficient use of it. The inter-farm associations for feed production created in each rayon have completely justified themselves, vigorous steps are being taken in many of them to adopt specialized,

intensive crop rotations, and the feed production land is producing a good yield. A total of 60 or more quintals of feed units per hectare has been obtained in feed production associations of Drokiyevskiy and Kriulyanskiy rayons, for example.

We must continue improving the functioning of the feed production associations and kolkhoz brigades, improve the structure of the feed cultivation land, use it to the maximum possible degree for producing inexpensive feeds balanced by types and nutritional value, and significantly increase the productivity of the feed production area. We need to increase areas planted to corn for silage to 180,000-200,000 hectares by reducing areas of perennial grasses, increase the yield to 250 quintals per hectare and lay in at least 4.5 million tons of silage with cobs at the stage of waxy ripeness. We must resolutely improve the technology employed for raising alfalfa, Comrade Grossu stressed.

We have frequently heard the words "effectiveness," "profit" and "profitability" at the congress of kolkhoz workers today, he went on to say. This is a gratifying thing, which attests to the fact that the personnel and the broad masses of rural workers have begun giving greater attention to the economic aspect of management. Effectiveness in agriculture grew considerably last year. A net income of 802 million rubles was obtained from the sale of farm products for the republic as a whole. This is 3.5-fold more than in 1980. The profitability level grew from 15 to 35 percent.

Possibilities for enhancing the effectiveness of agricultural branches are not being fully utilized, however. Among other things, poor use is being made of that powerful economic lever for stimulating production--mark-ups on procurement prices for high-quality and early products, for good weight conditioning and fattening of the livestock and for constantly increasing sales of output to the state.

Take animal husbandry, as an example. Last year only 42 percent of the young cattle sold in the republic as a whole had an average live weight of more than 400 kilograms, and only 50 percent of the price mark up was received. The remainder of the calves were sold at reduced weights, as a result of which around 40 million rubles in net income was lost. Farms are also suffering large losses due to poor quality and grade of the products of crop cultivation.

Leaders and specialists of kolkhozes and inter-farm enterprises and the economic services need to significantly improve the level of management and achieve good growth rates for production output not at any price, but with minimal outlays of labor and means. They need to make more effective use of economic levers, universally establish cost-effectiveness principles and new forms of labor organization, adopt the collective contract more boldly and make material and moral incentives directly dependent upon the end results of the production work.

In order to accomplish the plans outlined for improving farm economics we need to work hard to strengthen labor discipline in the rural area. We cannot accept the situation of absenteeism on the part of many kolkhoz workers during the peak periods of farm work, making it necessary to use blue-collar workers from industrial enterprises, white-collar workers, students and school children to harvest the crops. We need to get at the bottom of the poor discipline on a

number of farms and take organizational, social and indoctrinational measures to establish proper order in this matter. Greater reliance should be placed upon the farms' own manpower.

The party uses distributive relations, as we know, as a powerful means of enhancing labor activeness and discipline. It also demands outstripping growth of labor productivity over growth of wages. This applies also to the branches of the agroindustrial complex, including agriculture.

Unfortunately, this is not yet being satisfactorily accomplished in the kolkhoz sector. While labor productivity grew by 5 percent last year over the 1982 level for kolkhozes of the republic as a whole, average monthly wages increased by 10 percent. The gap between these indicators is even greater in certain rayons.

We need to strive to see that the management personnel analyze the performance of the collectives not just on the basis of increase in output, but also according to the increase in labor productivity and reductions in production costs and material outlays, and according to their profits and profitability.

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REGIONAL DEVELOPMENT

FOOD PROGRAM IMPLEMENTATION IN RSFSR

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 5, May 84 pp 2-5

[Article by RSFSR Minister of Agriculture V. Nikonov: "The Food Program of the RSFSR in Action"]

[Text] Two years separate us from the May (1982) CPSU Central Committee Plenum, which approved the Food Program of the country, which was formulated in conformity with the decisions of the 26th party congress. The plenum also adopted a number of decrees on the questions of the development of the agro-industrial complex, which for the purpose of the more proportionate and dynamic development of the sectors belonging to it has begun to be regarded as a unified and independent object of planning and management.

It was especially emphasized that a decisive role in the increase of the production of agricultural products belongs today to kolkhozes and sovkhozes. The main conditions for the achievement of this goal are the increase of labor productivity, the raising of the productivity of fields and farms, the extensive introduction in production of the achievements of science and advanced know-how and the improvement of the economic activity of all farms and first of all of unprofitable farms and farms with a low profitability.

Responsible and difficult tasks, which are connected with the implementation of the Food Program, have been posed for the workers of the RSFSR. The volumes of production of agricultural products have been specified. As before the increase of grain production remains the key problem of agriculture. By 1990 it is planned to increase the yield of grain crops by 6-7 quintals. Particular attention here should be devoted to the increase of the gross harvests of grain of wheat of the durum and strong varieties in the zones of their cultivation.

High gains in the production of potatoes, vegetables and other crops have been outlined.

Stepped-up indicators have been set for the stock breeding sector. During the 12th Five-Year Plan it has to ensure an average annual meat production (in dressed weight) of 9.8-10 million tons. This is 1.3- to 1.4-fold more than the level of the 10th Five-Year Plan. The production of milk and eggs will increase. All this should be achieved first of all by the intensification of animal husbandry. At the same time it is planned to increase the production of all types of fodders by 1.3- to 1.4-fold and to increase them by 1990 to 253 million tons of fodder units.

1983 was in essence the first year of work on the implementation of the Food Program, and a quite difficult year with respect to weather conditions. Nevertheless the kolkhozes and sovkhoses of the republic made noticeable progress. The growth rate of production increased, the qualitative indicators improved, labor productivity increased.

As compared with the first 2 years of the current five-year plan the yield of cereals increased by 3.1 quintals, potatoes--15.5 quintals, vegetables--9 quintals, sugar beets--51 quintals and flax fiber--1 quintal per hectare. For the first time in many years the plans of the procurement of coarse and succulent fodders were fulfilled.

The stock breeders made a significant contribution to the implementation of the Food Program. They fulfilled ahead of time the plan of the sale to the state of all types of livestock products and increased as against the level of the first 2 years of the five-year plan the procurement of livestock and poultry by 916,000 tons, milk--3.7 million tons, wool in pure fiber--2,900 tons.

The workers of the kolkhozes and sovkhoses of Belgorod, Moscow, Saratov, Tula, Orenburg, Sverdlovsk, Tyumen and Kamchatka Oblasts, the Mari, Chuvash and Yakutsk Autonomous Republics worked especially successfully last year. They fulfilled the plans of the sale of all the basic types of agricultural products.

In 1983 the program of the social development of the countryside was carried out rapidly. At kolkhozes and sovkhoses 11 million m² of housing (on the average 10 apartments per farm) were put into operation, which is 43 percent more than was put into operation at the end of the 10th Five-Year Plan. Schools for 117,000 and preschool institutions for 81,000 were built. The network of intrafarm roads was expanded, the transportation, medical and personal service of rural workers was improved.

Positive changes occurred in the economy of the majority of farms. The state allocated 12.6 billion rubles just for the increase of purchase prices and the markups on them for farms with a low profitability and unprofitable farms, of them 4.4 billion rubles, or 35 percent, were for farms of the Nonchernozem Zone.

More than 90 percent of all the assets, which were allocated to the republic for the establishment of price markups, were channeled into the increase of the profitability of the production of the basic types of livestock products.

Starting in 1983, in all the economic regions of the republic, except the Northern Caucasus and the Volga River region, the wage was increased for the managers and specialists of sovkhoses, the administrations of agriculture of the rayon, oblast and kray soviet executive committees and the ministries of agriculture of the autonomous republics. The total wage fund of this category of workers increased by 595 million rubles a year.

The implementation of all these measures helped to strengthen the financial and economic status of kolkhozes and sovkhoses, created favorable conditions for the introduction of cost accounting and increased the material interest of labor collectives in the increase of the production of output.

Last year for the first time in the past 10 years the kolkhozes and sovkhoses of the republic completed their work with a profit. Its amount came to 10.1 billion rubles. In all in 1 year the total number of unprofitable farms decreased by 12,200. The overall profitability of kolkhoz production came to 23 percent and that of sovkhos production came to 21 percent. And whereas in 1982 there was a loss of 330 rubles per average annual worker, last year there was a profit of 1,040 rubles.

Thus, a start has been made, and the start is a quite good one. Today the workers of the Russian countryside have to consolidate and develop the achieved successes. It is envisaged by the plans of 1984 to increase the production of the gross output of agriculture by 12 percent as compared with the average annual level of the first 3 years of the five-year plan and to increase the yield of grain crops by 4.9 quintals per hectare. A significant increase of the yield of sugar beets, sunflowers, potatoes and vegetables is also envisaged. The plans in animal husbandry are also intense. It is planned to increase the volume of the procurement of meat by 9 percent, milk--8 percent and wool--2 percent. But the main thing is that the plans of this year are oriented more than ever toward the increase of the efficiency of kolkhoz and sovkhos production. Therefore it is important for every farm and every labor collective to imagine clearly, by what ways and means the assignments will be fulfilled. It is necessary to evaluate objectively the real situation and to identify the bottlenecks in the fulfillment of the outlined tasks. But, unfortunately, we have many of them, these bottlenecks and unsolved problems.

In spite of the assistance of the state, many kolkhozes and sovkhoses ended last year with losses. The foremost duty of the local agricultural organs and the councils of the rayon agro-industrial associations is to look into things with each of the farms of this kind and to reveal and eliminate the factors which are preventing them from working with complete efficiency.

As before the question of the observance of planning discipline is urgent. There are also considerable omissions in this matter. Suffice it to recall how the plans of the production of strong and durum wheats, which are necessary for the baking of high quality bread and the production of macaroni items, are being fulfilled. In 1983 the plan of the procurement of strong wheats was fulfilled by one-half, while that of durum wheats was fulfilled by 12 percent. Of the 26 oblasts, krays and autonomous republics, which are engaged in the production of such wheats, Omsk Oblast alone is steadily increasing their production and sale to the state.

The kolkhozes and sovkhoses of Stavropol, Altay and Krasnodar Krays, the Bashkir ASSR and Rostov and Chelyabinsk Oblasts are working in this direction at significantly less than their potentials.

The reserves of the increase of the production of groat crops, and first of all buckwheat and millet, are not being completely used. But experience of obtaining good harvests of them exists in the republic. Last year, for example, the farms of Aznakayevskiy Rayon of the Tatar ASSR from an area of 7,600 hectares harvested on the average 15.3 quintals of buckwheat each.

The farms of Millerovskiy Rayon of Rostov Oblast and Yershovskiy Rayon of Saratov Oblast constantly achieve high yields of millet.

At the same time the farms of Orel Oblast for several years have been fulfilling the plan of the purchase of buckwheat by approximately 11 percent, Kursk Oblast--25 percent. The farms of Voronezh and Rostov Oblasts coped with the plans of the sale of millet at the level of less than 30 percent.

Matters with the production of sunflowers are far from the best, although in recent years much has been done for the introduction of industrial technologies of their production and the more complete supply of the plantings with fertilizers and herbicides. But the yield of oil-bearing seeds still cannot be met, while in 1983 it was even less than in 1982. And the many reason here, as in many other cases, lies in low technological discipline.

At the December (1983) CPSU Central Committee Plenum it was especially stressed that the strict fulfillment of the state plan is not only an obligation, but also the patriotic duty of every Soviet individual and every labor collective. And this demand should be decisive in all the work on the implementation of the Food Program.

While working on the intensive plans of 1984, it should be borne in mind that the economy of the republic in 3 years of the five-year plan failed to deliver to the state a significant amount of grain, sugar beets, meat, milk and other products. To fulfill the plan of the year and the five-year plan as a whole--the duty of the workers of the kolkhozes and sovkhozes of the RSFSR and all the workers of the agro-industrial complex now lies in this.

Serious, painstaking work has to be done on the introduction at every kolkhoz and sovkhoz as applied to their specific conditions of scientifically sound systems of farming. Frequently they approach this important matter formally: they have specified the structure of the planted areas, have achieved some changes in the assimilation of crop rotations and believe that the system has been introduced. Here, of course, they are forgetting the main thing--the fact that the system of farming is a set of measures, a long-term agronomic program of work with each field and with each plot. The fulfillment of this program is exactly also the basis of the steady obtaining of the planned yields.

I believe that it would be correct to regard as the basic criterion of the introduction of systems of farming at farms the achievement by them of the yields which this system envisages. Moreover, not in 1-2 years, but over a long period. Precisely such an approach makes it possible to evaluate objectively the work of the agronomic service.

Purposeful, systematic work on the increase and the extensive reproduction of soil fertility should become a subject of particular concern and a most important component of the introduction of systems of farming. Today, as well as in the future, there is no and will be no more responsible and more difficult a task than this one. Success both in plant growing and in animal husbandry depends on its accomplishment.

For the purpose of ensuring the increase of soil fertility it is envisaged by the Food Program to increase the delivery to agriculture of the republic of mineral fertilizers and chemical soil improvement agents and to increase in 1990 the production of organic chemistry to 660 million tons, which is nearly 1.4-fold more than the 1983 level. It is also envisaged to step up the work on the liming of acidic soils and the application of gypsum and the land improvement cultivation of saline lands.

By 1990 the deliveries of mineral fertilizers will come to 15.9 million tons in terms of 100-percent nutrient. By means of their efficient use alone the task has been posed to ensure as compared with 1980 an increase of grain production by 15.8 million tons and fodders on plowland by 17.4 million tons, to increase the harvest of forage from natural fodder fields and to obtain more potatoes and vegetables.

The task is difficult. In order to fulfill it, the kolkhozes, sovkhoses and Scientific Production Associations for Agrochemical Services to Agriculture need to ensure the great efficiency of every kilogram of fertilizers, every ton of chemical soil improvement agents and organic fertilizers. And here an important role is being assigned to the agrochemical cultivation of fields, which is a complete set of operations on the increase of soil fertility. Last year it was performed on an area of 2 million hectares, this year it is planned to increase the amounts of this work to 3.4 million hectares. The task is for the periodicity of the performance of operations by this method on each field to amount to not less than once in 4-5 years.

There is also another, no less important direction of the work with land--the preservation of the fertility of soils, its protection from water and wind erosion. In the republic there are many lands which have been exposed to such processes. Therefore the systems of conducting farming should also be soil-conserving systems.

To underestimate the implementation of soil conservation measures means to tolerate the harm which water and wind erosion does to farming. And it is enormous. According to the data of the Bashkir Affiliate of the USSR Academy of Sciences, on the average 650 kg of humus, and with it such an amount of nutrients, which is sufficient for the formation of a crop of 15-16 quintals of grain, are lost annually from a hectare of plowland from the effect of water erosion alone.

Now about animal husbandry, a sector in which the basic emphasis is being placed on intensive factors of development. Well-organized breeding work should become a significant reserve in the increase of the productivity of livestock. In dairy cattle breeding for this purpose steps are being taken on the crossbreeding of animals, as well as the improvement of the work of breeding factories and sovkhoses.

Much has to be done for the improvement of the reproduction of the herd. So far on the average for the republic the yield of calves per 100 cows and of lambs per 100 ewes does not exceed 70-80, piglets--per 100 basic sows--1,200-1,300, and at a number of farms these indicators are even less. It is impossible to tolerate such a situation. And first of all the workers of the

veterinary service of farms and the local agricultural organs should realize this.

Of the other reserves of the increase of the production of livestock products one should especially single out the improvement of the use of the created production capacities and the increase of the marketability of farms.

At the beginning of this year at hog raising barns 8.3 million pens were empty, at farms and complexes of large-horned cattle--3.9 million. The production capacities are being used especially poorly at the farms of Vologda, Novgorod, Yaroslavl, Lipetsk and Tambov Oblasts and the Dagestan ASSR.

Meanwhile there is the experience which was gained in Altay Kray, Leningrad, Moscow and Penza Oblasts and the Bashkir ASSR. Here the farms are using to the utmost the capacities of complexes, are carrying out the intensive fattening of large-horned cattle and are achieving high indicators--a weight gain of 1,000-1,100 g a day per head with a consumption per quintal of weight gain of 6-7 quintals of fodder units.

The different results of work are not so much different possibilities as a different level of the work and a different attitude toward the matter.

There are considerable reserves of the increase of the production of livestock products. They are the turning over of full-weight livestock, the decrease of their slaughtering for intrafarm needs and the restoration of the small, previously eliminated hog raising farms. And all of them should be used.

It goes without saying that more attention should be devoted to fodder production. This year the procurement of succulent and coarse fodders has to be increased by not less than 10 percent as against the level of last year. The plantings of winter and spring rape and, in arid zones, of fodder sorghum and Sudan grass have to be enlarged. Kolkhozes and sovkhoses should devote more attention to the procurement of combined silage. Many hog raising farms of Belgorod and Rostov Oblasts and Krasnodar Kray are operating reliably, without irregularities precisely due to this fodder.

The task of increasing the production of fodders is closely connected with the increase of the efficiency of the lands being reclaimed and with the choice of the most effective use of the capital investments in reclamation construction.

The experience of the leading farms convinces us that, when working on the problems of increasing the productivity of reclaimed lands, it is necessary to devote more attention to soil improvement operations. Few assets are being spent on the performance of these operations, but the return is appreciable--up to 30-40 quintals of hay per hectare.

The accomplishment of the tasks, which were specified by the Food Program, require the further improvement of the organization of labor and the extensive dissemination of the collective contract. Last year 81,200 links and brigades, which operate without an order, worked at the kolkhozes and sovkhoses. Some 22 percent of the sowings of cereals, 34 percent of the fodder crops, half of the entire area of grain corn, sugar beets and potatoes and nearly 40 percent

of the sunflowers are attached to them. In animal husbandry these collectives attended nearly 10 percent of the livestock population.

In Saratov Oblast the links and brigades, which operate without an order, achieved a yield of cereals of 18.7 quintals per hectare. This is nearly 3 quintals more than the average indicators for the oblast. In Irkutsk Oblast 41.6 percent of the area of plowland is attached to such links. The yields of grain here were 5 percent more, potatoes--38 percent more and hay of perennial grasses--12 percent more than the average oblast indicators.

And today it is necessary to change over from agitation for the contact to its extensive introduction. This year the task has been posed to attach to the collectives, which operate without an order, not less than 35 percent of the plowland and to see to it that they would work, as a rule, not on individual crops, but on the entire crop rotation. In animal husbandry the collectives, which operate without an order, should attend not less than 15 percent of the head of cows, hogs and poultry, 66 percent of the large-horned cattle in fattening and sheep.

Many problems, which are connected with the improvement of the interrelations of the collectives of these brigades and links with the administration of the farms and the improvement of the planning and remuneration of labor, have to be solved.

Frequently the links and brigades, which operate without an order, are set up formally, they are not completely supplied with equipment and people for the planned amount of work. They also do not always approach objectively the determination of the standard level of the yield or the productivity of livestock, and this entails groundless overpayments or, on the contrary, a decrease of interest. The changeover to the collective contract is not always backed by complete cost accounting, which is at variance with the very essence of this form of the organization of labor.

1983 was the first year of operation of the new organs of management of agriculture and other sectors of the agro-industrial complex--agro-industrial associations. The creation of these organs and the formation of their councils at the level of rayons, oblasts and krays in practice were completed by the start of the spring field work.

A short period has passed. The process of the formation of agro-industrial associations takes place with difficulty. And still there is reason to draw the conclusion that the transfer to subordination to the rayons of a large portion of the farms, the increase of the role of the rayon unit and the broadening of its rights with respect to the monitoring and coordination of the activity of all the service and processing enterprises and organizations had a positive effect on the matter. The problems, which are connected with the concentration of the forces and assets of our partners in case of the provision of assistance to kolkhozes and sovkhoses, began to be solved more efficiently, the enterprises and organizations of the Agricultural Equipment Association, the Scientific Production Association for Agrochemical Services to Agriculture the meat and dairy and food industries began to work more actively. More attention began to be devoted to the introduction of advanced methods, especially

industrial technologies. The influence of rayon agro-industrial associations and their role in questions of the coordination of the work of partners are being felt more perceptibly.

In the Tatar ASSR, for example, the Agricultural Equipment Association has assumed not only the repair and maintenance of the machine and tractor fleet, but also concern about the building at each farm of good machinery yards and oil tank farms, and it is doing this on its own.

The councils of many agro-industrial associations have begun the practical implementation of measures on the decrease of losses in case of the turning over and transportation of products. In each specific case these questions are settled differently. But the main direction, in which they are proceeding, is the organization of the acceptance of products locally, by the forces of the procurement agents.

In Leningrad Oblast a large portion of the vegetables are received directly at the farms. Belgorod Oblast is implementing practical steps on the complete changeover to the receipt of milk directly at the livestock farms.

In a number of oblasts and rayons a unified traffic control service is being set up on the initiative of the agro-industrial associations, which is making it possible to improve significantly the efficiency of the management of transport during the period of the hauling of grain, sugar beets and potatoes and when performing many other operations.

The experience, which approved by the CPSU Central Committee, of the work of the Glazunovskiy Rayon Agro-Industrial Association, the council of which is concentrating its activity in order to ensure the coordinated work of all the enterprises and organizations of the agro-industrial complex, is directing it for the achievement of high results in production and is devoting particular attention to the highly efficient use of the economic potential, which has been created in the countryside, merits extensive dissemination.

There is much that is useful in the work experience of the Petrovskiy Rayon Agro-Industrial Association of Stavropol Kray. Milk is turned over to the state only through direct ties, and 95 percent of it is sold as being of first quality. For refrigerated milk and for the increase of its quality last year the kolkhozes and sovkhoses received additionally from the state 600,000 rubles. Livestock are turned over only through central hauling. For more than 10 years now all the subdivisions at the kolkhozes and sovkhoses of the rayon have been changed over to cost accounting. More than 50 percent of the plowland and all animal husbandry are attended only by collectives on a contract.

But frequently, unfortunately, the agro-industrial associations are absorbed by current questions and immediate problems. So far the councils of many agro-industrial associations are not exercising fully the rights granted to them in the area of planning, the regulation of economic interrelations and the determination of the rates for work and services.

Centralized development and material stimulation funds have not been created at all the associations. Some are still waiting for some additional instructions and explanations on all these questions.

The successful accomplishment of the tasks, which are specified by the Food Program, depends in many ways on what production, housing, cultural and everyday conditions are created for people and what assistance is given to them in the fulfillment of the assignments and socialist obligations.

The party Central Committee in recent years has turned more than once to the problem of personnel in the countryside. At the May (1982) Central Committee Plenum it was emphasized again that stable managerial personnel and stable labor collectives are the basic guarantee of great effectiveness in work. A discussion of this also took place at the All-Union Conference on Problems of the Agro-Industrial Complex.

However, for the present we have not achieved the proper stability of personnel.

In Altay and Krasnoyarsk Krays and Chita Oblast last year one sovkhos director in five was replaced again. Due to the great interchangeability the proportion of managers of farms with a length of service of 10 years and more in Pskov, Bryansk, Penza, Orenburg and Kemerovo Oblasts has decreased. The situation with chief specialists is also no better. The average length of their work at one farm is 4 years, and it is quite understandable that during such a short time they have at best the opportunity to study the farm and cannot correct the situation significantly.

Inadequate attention is being devoted to the increase of the material interest of the specialists of kolkhozes and sovkhoses by means of the conferring on them of class titles and categories. For this is not only the wage, but also social prestige, which is frequently no less dear to people. The managers of farms and the councils of the rayon agro-industrial associations should always devote foremost attention to these questions and keep them under the constant control.

As was already said, in 1983 positive changes occurred in the development of agriculture of the republic and reassuring results were achieved. But the assignments of this year are more intense. And here, as General Secretary of the CPSU Central Committee K. U. Chernenko said in his speech at the February (1984) Plenum of the party Central Committee, it is important to preserve the gathered speed and the overall aim at the practical accomplishment of the tasks, to increase the level of party and state supervision of economic work and to develop the positive trends actively, lending them a stable nature. We should make these demands on ourselves when accomplishing all the tasks which have been posed for the workers of the complex.

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AGRICULTURAL MACHINERY AND EQUIPMENT

STATUS OF NEW EQUIPMENT FOR LIVESTOCK SECTOR DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 2 Jun 84 p 2

[Article by V. I. Zhanov, chief engineer of a pilot specialized design bureau for a set of machines for farms of large-horned cattle (Riga): "Machines for Farms"]

[Text] The workers of the countryside in their letters, which arrive at SEL'SKAYA ZHIZN', are interested in what new things in the technical equipment of dairy farms will appear in the next few years. V. Vel'mizov, a supernumerary correspondent of the newspaper, asked V. I. Zhanov, chief engineer of a pilot specialized design bureau for a set of machines for farms of large-horned cattle (Riga), to answer this question.

In recent years the collective of the pilot specialized design bureau has developed machines and equipment for the mechanization of the processes of watering, milking, fodder distribution and manure removal in dairy cattle breeding of more than 30 descriptions. Now just recently the first batch of TSN-160A manure removing conveyors, which was produced by the Kovel'sel'mash Plant, was delivered to farms. Another development of our bureau has gotten a start in life. The new model is significantly more reliable in operation than its predecessors.

A characteristic feature of the new equipment is universality, which provides the possibility of its use both at dairy farms and complexes, which are being newly built, and at ones which are being renovated. The use of such equipment in sets makes it possible to decrease the expenditures of labor on the production of milk to two-fifths to one-half. These results are confirmed by the practical experience of many completely mechanized farms.

For example, such a stock farm, more precisely a complex for 800 cows, exists in Latvia at the Yudazhi Farm. Machines of the latest generation perform all the labor-consuming processes here. Thus, the Karusel' - UDA-100 unit enables 1 person to milk up to 100 cows an hour. RK-50 stationary fodder distributors, which are fed by an ARS-10 mixer-distributor, distribute the fodder here. A flow line, which consists of US-15, KNP-10 and UTN-10 machines, removes the manure. The animals are kept in comfortable stalls, their good feeding has been organized. And as a result, at present the milk yields at the complex have

been increased to 4,600 kg a year per cow, the expenditures of labor per quintal of output do not exceed 1.6 man-hours with a workload per stock breeder of 35 head.

Our collective is performing a large amount of work on the introduction of new machines and equipment at kolkhozes and sovkhozes. The experience of the renovation and fitting with new equipment of the Purmali Farm of the Priyekule Breeding Station, the Salas Farm of the Lachplesi Kolkhoz and the Tsentral'-naya Farm of the Kekava Kolkhoz merits attention. Highly productive milking parlors, which are equipped with Yelochka and Tandem automatic units, were introduced here for the first time in the country. These developments are noted by high technical and economic indicators. The Yelochka-UDA-16 is nearly twofold more productive than the nonautomatic unit and fourfold more productive than the DAS-2B and AD-100A units.

The experience on the introduction of an automatic tether-release for cows at the Kekava Kolkhoz, which makes it possible to use successfully the milking parlor even in case of the tethered housing of livestock, is important, in our opinion, for dissemination everywhere. The Mamlyutka Machine Building Plant is beginning its series production in 1984.

Unfortunately, it has to be stated that new equipment is being introduced at the farms of the country unjustifiably slowly. There is something here for the specialists and managers of farms, as well as the rayon agro-industrial associations to consider.

When developing new machines we devote much attention to their quality and technical level. Thus, during the last five-year plan the developments of the collective received 35 medals at the Exhibition of USSR National Economic Achievements. In case of the development of equipment we focus attention on the high level of its standardization. For example, with respect to milking units it comes to more than 90 percent, with respect to manure removing conveyors and fodder distributor-mixers--82 percent, milk cooling tanks--94 percent. The State Seal of Quality has been awarded to 10 machines and 6 basic assemblies.

Our collective is also concerned about the durability of the equipment being developed. Thus, the TSN-160 manure removing conveyor serves for up to 7 years, that is, more than twofold longer as compared with the preceding model. The durability of modernized mobile fodder distributors has also been increased by twofold and more by means of the introduction in the longitudinal conveyors of heat-treated round-link chains and an improved design of the beaters and the transverse conveyor.

It should be noted that the main indicator of the work of the pilot specialized design bureau--the economic efficiency for the national economy of the introduced achievements--during the past 4 years has come to 8 rubles per ruble of expenditures, that is, is more than twofold greater than the average level for the sector. But, when speaking about the increase of the efficiency of the equipment being developed for dairy animal husbandry, they cannot ignore the low quality of some materials and components, which are being supplied by enterprises of the Ministry of the Chemical Industry, the Ministry of the

Petroleum Refining and Petrochemical Industry (industrial rubber items) and the Ministry of the Electrical Equipment Industry (electric motors, control boxes). It is necessary to see to it that a machine, which is cherished by designers, would work reliably, and without failures due to someone's omission.

Unfortunately, many other obstacles in the way of the development of modern highly efficient equipment, the surmounting of which seems not to require particular efforts, also still exist. One of them is the existing practice of drawing up the technical specifications for new equipment in the process of its development. Suffice it to cite the following fact: on the average per machine from the start of its development to delivery for production the leading designer should gather about 160 signatures and official stamps of outside organizations. We have calculated: on the average 180 man-days are spent on this, in monetary terms--exactly 5,500 rubles. The decrease of these expenditures is an important reserve of the saving of time and capital.

I believe that for the shortening of the period of the development of equipment the Ministry of Agriculture, the Ministry of Machine Building for Animal Husbandry and Fodder Production and the State Committee for the Supply of Production Equipment for Agriculture with the assistance of the USSR State Committee for Standards need to approve in the shortest possible time a sectorial standard on the development and delivery for production of new equipment in strict conformity with All-Union State Standard 15001-173, having envisaged in this case the significant decrease of signatures and official stamps.

At present the work of the collective of the pilot specialized design bureau is focused on the further improvement of series-produced equipment and the development, I stress, of fundamentally new equipment for farms of large-horned cattle. It is possible to name as the most important of the machines being newly developed manipulators for the washing of the udder of cows and automatic stripping and removal of the milkers.

Among the innovations are thermos tanks, which are 95 percent standardized with the tanks which are already being produced by industry. Their series production will make it possible to introduce the flow cooling of milk and to save 1 kWh per ton of cooled milk or about 11 million kWh of electric power a year. Stock breeders will receive the modernized KTU-10A and RMM-6 fodder distributors with an increased durability of the basic assemblies.

The development of the KPN-10 unit for the removal of manure from lateral channels is next. It will make it possible to develop a flow line for the removal of manure from the stall to the manure pit without the participation of man. Such experimental lines are already in operation at a number of farms of the Latvian SSR.

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AGRICULTURAL MACHINERY AND EQUIPMENT

MACHINE BUILDERS' RESPONSIBILITY FOR FARM EQUIPMENT STRESSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Feb 84 p 1

/Article: "A Word to the Reader"/

/Text/ Not much time remains before the beginning of spring field work. In early March sowing will begin in the country's southern regions and the campaign will expand throughout the country, subjecting ever more farms to a stepped-up pace. It is well known that, how one works in spring, so will the land respond with the harvest in the fall. That is why both the efforts of rural machine operators and of collectives of the enterprises of the State Committee for Supply of Production Equipment for Agriculture are now directed toward a reliable and on-schedule preparation of equipment for spring work. However, the future harvest will become not only the evaluation of their labor, but also of the labor of the workers of machine building and the motor vehicle industry.

The decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for the Further Rise in the Technical Level and Quality of Machinery and Equipment for Agriculture, Improvement in Their Utilization and Increase in Their Production and Deliveries in 1983-1990" adopted last year and the decisions of the December (1983) Plenum of the CPSU Central Committee require from you, machine builders, serious work on increasing the operational reliability and durability of agricultural equipment. This is one of the most important conditions for a successful fulfillment of the Food Program. Special attention is paid to strengthening the discipline of deliveries of both machines and their spare parts according to the prescribed list.

The collectives of many machine building enterprises regard this demand with great responsibility and now the situation has improved somewhat as compared with past years. The preparation of soil cultivating and sowing equipment is now essentially being completed in most oblasts and krais in the Central, Volgo-Vyatka, Volga and other regions in the RSFSR, the Ukraine and Belorussia. Farms in the Stavropol area and Krasnodar Kray have completed the preparation for spring.

However, some enterprises have not coped with deliveries. For example, the Odessapochvomash Production Association has failed to deliver about 900 tractor plows and the Chirchiksel'mash Plant has not even begun the production of universal KKhU-4 cotton cultivators.

As before, the delivery of spare parts remains the sorest spot. It would seem that machine builders have coped with last year's plan in terms of their production volume, which is a gratifying fact. However, the picture changes immediately if we glance at the plan fulfillment in terms of the products list. Judge for yourselves: The assignment has not been fulfilled for 108 out of the 633 parts taken into account. For example, the enterprises of the Ministry of Tractor and Agricultural Machine Building with respect to spare parts for tractors alone have disrupted the delivery of one out of seven parts and motor vehicle builders have not fulfilled the plan for 46 items.

Owing to the deficiency of important spare parts the repair of many types of equipment is delayed. For example, the shortage of crankcase units threatens the preparation of more than 14,000 engines for DT-75M and T-4A mass tractors with disruption. Owing to the underdelivery of crankshafts, powerful Kirovets tractors in a number equal to the plant's annual program are doomed to downtime.

Today we appeal to you, Altay motor builders. For many years your enterprise has occupied a firm place among the most unobliging suppliers. During 3 years of the five-year plan you have owed more than 20,000 crankcase units to rural areas. Last year alone you underdelivered more than 70 types of parts and this year you disrupted the delivery of some spare parts. Chelyabinsk tractor builders, your unfinished work also evokes justified reprimands. During the last 5 years you have fulfilled the assignments for the production of a number of parts only 40 to 60 percent. The collectives of the Voroshilovgrad Crankshaft Plant and of the Vladimir Tractor Plant have not coped with plans year after year.

An impression is created that the managers of these plants and party and trade union organizations have not fully realized their responsibility for the discipline of deliveries and have insufficiently mobilized collectives for an unconditional fulfillment of state plans.

Certain motor vehicle industry enterprises also put rural workers in a difficult situation. This is primarily the collective of the Michurinsk Motordeal' Production Association. A piston ring is a cheap spare part, but owing to its shortage powerful equipment is idle for a long time at the busiest time. Apparently, the time has come for the ministry to seriously examine the state of affairs at this enterprise and to take the necessary measures for a strict plan fulfillment.

Colleagues from the Yaroslavl Avtodizel' Production Association, through your fault the repair of energy saturated tractors is delayed. The Yaroslavl Motor Plant forming part of the association does not ensure the production of many parts for tractors of the K-700 type in quantities necessary for their repair.

Nor is everything satisfactory with the quality of the produced spare parts. A significant number of parts received at the bases of the State Committee for Supply of Production Equipment for Agriculture are returned to enterprises for the correction of defects. This involves additional expenditures of labor and funds.

A few days ago the Politburo of the CPSU Central Committee examined the problem of the course of fulfillment of the plans for the preparation for spring sowing and especially stressed the need to create an atmosphere of intolerance for any manifestations of irresponsibility and laxity and for breaches of production and technological discipline. All existing shortcomings and lags should be eliminated as soon as possible. The task of intensifying party influence at decisive areas of work and of increasing the efficiency of socialist competition for a successful implementation of the entire set of measures for a prompt preparation for spring sowing was set before party committees.

In the Ministry of Tractor and Agricultural Machine Building and in the Ministry of the Automotive Industry there are many enterprises enjoying deserved respect by rural workers; for example, the Volgograd Tractor Plant, the Minsk Motor Plant, the Kursk Tractor Spare Parts Plant and the Orel Gear Plant. Rostov and Kherson combine builders and workers of Tashsel'mash, the Chelyabinsk Automotive Plant and the Riga Avtoelektropribor Plant cope with plans successfully. They have been able to organize their work so that they fulfill both the plans for basic output and the assignments for spare parts in an equally efficient manner. High performance discipline and concern for the honor of their enterprise are characteristic of them. Such traditions should be cultivated in every collective.

Machine builders, your duty is to do your utmost not to let rural workers down and to provide them with everything that is necessary for a successful performance of the sowing campaign.

11,439

CSO: 1824/329

AGRICULTURAL MACHINERY AND EQUIPMENT

NEED FOR RELIABLE REPAIR OF AGRICULTURAL EQUIPMENT STRESSED

Moscow SEL'SKAYA ZHIZN' in Russian 20 Mar 84 p 1

/Article: "Reliable Equipment for the Spring Field"/

/Text/ A crucial time has arrived for the country's farmers. The sowing campaign is unfolding on a wide front on fields awakened by the spring sun. The final results of the fight for the harvest of the 4th year of the five-year plan largely depend on the outcome of this sowing campaign.

The workers of the agroindustrial complex have at their disposal everything that is necessary to increase the production of grain and other products and to successfully fulfill the assignments of the Food Program. Recently, the material and technical base of agriculture has been strengthened considerably. Now the chief thing is to fully utilize the created potential and for this it is necessary to complete the all-around preparation for the mass departure for the field as quickly as possible and to ensure an efficient organization of spring sowing everywhere.

This spring is not easy. The unfavorable weather conditions have affected the state of winter crops markedly. In some zones they need to be repaired, topdressed with fertilizers and even resown. The scale of spring field work is growing considerably and the load on equipment is increasing. The sowing campaign will demand from people a full devotion of efforts, high occupational skills and an innovative approach to the accomplishment of the tasks set. It is especially important to see to it that the machine and tractor pool and motor transport operate reliably and faultlessly. This is one of the major potentials for the growth of labor productivity of rural machine operators, decrease in production costs and intensive development of the sector.

As current statistical data show, throughout the country there are now many more tractors, sowing and soil cultivating units and other machines necessary for the spring field on the line of readiness than at this time last year. It is remarkable that under the conditions of the agroindustrial complex the traditional socialist competition of rural repairmen has become more effective and efficient and has acquired new features. It is characterized by a mass creative search for advanced forms of labor organization at kolkhoz and sovkhoz shops and at the specialized enterprises of the State Committee for Supply of Production Equipment for Agriculture, an extensive introduction of

the collective contract, a skillful application of the achievements of scientific and technical progress in practice and a careful attitude toward material resources.

In the course of the all-Union competition for a prompt and exemplary preparation of equipment for field work its initiators--rural workers in the Azerbaijani SSR and Voroshilovgrad, Kustanay, Minsk and Saratov oblasts--have attained high results. For example, many collectives of Voroshilovgrad repairmen work according to a single order, in two shifts. They have increased the coefficient of utilization of technological equipment and labor productivity and have been some of the first to repair tractors, plows, seeders, cultivators, harrows, potato planters and sprinkling machines. Advanced repair techniques and modern methods of restoration of parts and units are highly thought of here.

Machine operators and engineering and technical personnel in Ivnyanskiy Rayon, Belgorod Oblast, have exemplarily organized the preparation of the machine and tractor pool for spring sowing. They have coped with the fulfillment of socialist obligations ahead of schedule. The restored machines have undergone a careful running test and mutual checks of the readiness for spring have been made by farms. Warranty certificates have been issued for the renovated equipment.

The rayon's repairmen have built the road to success with the active participation of the council of the rayon agroindustrial association. For example, relations among kolkhozes, sovkhozes and the rayon agricultural equipment association are improved on its initiative and under its constant control. The partners' efforts are directed toward one channel--to utilize the entire technical arsenal efficiently and with the maximum return.

Many examples of a careful attitude toward equipment can be cited. For example, in Stavropol Kray all the work on spring fields has been entrusted to large overall sowing detachments staffed with experienced machine operators. The necessary machines and trailed implements have been attached to them. In order to ensure their high readiness, mutual control checks have been organized on farms. The detected shortcomings have been eliminated promptly.

Unfortunately, however, there are also other facts. There are still frequent cases when in the chase after a satisfactory report shops turn out machines repaired hastily, in an inferior manner. The check conducted by the State Inspectorate for Supervision of the Technical State of the Machine and Tractor Pool in some rayons of Kursk Oblast showed that a significant part of the tractors that had been in shops had serious defects and needed repeated repairs. On a number of farms in Lipetsk Oblast a large number of sowing and soil cultivating units were considered in good order, but, in practice, were not ready for departure to the field.

Letters from machine operators, which are received at the editorial department, contain many complaints addressed to the enterprises and organizations of the State Committee for Supply of Production Equipment for Agriculture. Some of its associations slowly reorganize their work and break contractual obligations.

In particular, in Omsk Oblast the Stepnoy Machinery and Repair Plant greatly lets down rural workers. The tractor engines, subassemblies and units restored at its shops often get out of order and do not withstand the guaranteed service life. At the enterprise the level of technological discipline is low and the quality of output is controlled poorly. In Dagestan the collectives of the Khasavyurt and Kizlyar stations for the technical servicing of energy saturated tractors are spoken of with reproach. Through their fault many machines are idle.

Such cases are intolerable. The downtime of poorly repaired equipment on the spring field costs the state too much. Harvests are lowered and valuable output is lost. It is necessary to take decisive measures, to promptly eliminate the shortcomings in the work of repair enterprises, to ensure the readiness of the machine and tractor pool in a short period and to strive for its highly productive and reliable operation on the spring field.

11,439

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TILLING AND CROPPING TECHNOLOGY

FORECAST FOR SPREAD OF AGRICULTURAL PESTS, BLIGHT IN TURKMENISTAN

Ashkhabad SEL'SKOYE KHOZYAYSTVO TURKMENISTANA in Russian No 2, Feb 84 pp 30-31

/Article by D.N. Yemelina, head of the Ashkhabad Oblast Laboratory for Forecasts and Diagnostics of Pests and Diseases: "Forecast of Spread of Pests and Diseases for 1984"/

/Text/ The 1982/83 winter was characterized by warm weather and an insufficient amount of precipitation. Compared to last winter, the average 10-day temperatures were higher by 2-8 degrees. This promoted fine wintering conditions and an extremely hot summer -- for the intensive development of harmful insects.

Cotton-ball worm. Last year, this pest was observed in increased numbers on the cotton plants and even in such rayons as Kaakhkinskiy, where only individual specimens had been observed earlier. Moreover, large numbers of these worms were observed in all four cotton generations. The infestation of cotton plants in Chardzhou, Ashkhabad and Mari oblasts reached 24-50 percent with a high density: 18-24 and even 60 caterpillars per 100 plants.

A large number of natural entomophages was observed. The release of useful entomophages, raised in a biological laboratory, was carried out. The effect of the entomophages was 35-78 percent.

Chemical treatments were carried out on severely infested fields. The technical effectiveness of Dendro-bacillin with Sevin was 60-85 percent, Thiordan -- 60-70 percent and Tsimbush -- 80 percent.

During an autumn inspection (November), it was noted that fifth generation caterpillars had continued their development on cotton plants in Ashkhabad Oblast. Pupae were noted in the soil. The density of the pest was as follows: on cotton fields -- 0.9-1.3 pupae per square meter and 1-3 caterpillars per 100 plants; on vegetable crop fields -- 0.5-2.9 pupae, 2-3 caterpillars per 100 plants and on some farms in Chardzhou Oblast up to 3.2 pupae per square meter; on alfalfa fields -- 0.2-1 pupae; along border strips and the edges of roads and fields -- 0.1-0.3 pupae per 1 square meter.

An increase in the degree of harm caused by the worm is possible in 1984, since the conditions for the pest preparing for winter are favorable and its density high owing to the late ripening periods for the cotton. In addition, a

reduction took place in the accumulation of entomophages in 1983 as a result of the use of toxic chemicals.

In order to prevent an outbreak of the pest on cotton plants in 1984, it will be necessary during the early spring period to organize an inspection of all of the sowing areas and weed vegetation growing around these fields. The timely detection of the pest and the carrying out of protective measures in a high quality manner can prevent a flare-up of the pest.

Beet army worm. This is a polyphagous pest. Over the past few years, conditions unfavorable to the beet army worm have developed and its population has been in a phase of depression in all areas. However, during years of mass propagation the beet army worm can encompass vast territories and cause considerable harm to agricultural crops.

Following a prolonged period of depression, an outbreak of this pest is possible in 1984 in view of the fact that during the autumn inspection period the density of the pupae, in all areas and for all agricultural crops, was 0.3 specimens per square meter.

The planned area of treatment for 1984, taking into account the frequency rate for treatments against the cotton-ball worm and the beet army worm, will be 50,000 hectares.

Winter moth. Last year the density of this pest in cotton plants was 0.4-0.7 specimens per square meter. During the second 10-day period in May, at the Leninizm Yely Sovkhoz in Gyaurskiy Rayon, the infestation of cotton plant seedlings on individual fields reached 50 percent, with up to 7-10 percent of the plants perishing. In Tashauz Oblast the density of the pest reached 2 caterpillars per square meter and on vegetable crops -- 0.3-3.8 specimens per square meter.

In accordance with the results of the autumn inspection, the number of caterpillars which entered wintering per square meter was: on cotton fields -- 0.3-1.5 caterpillars; on vegetable crop fields -- 0.3-1.7 specimens; on individual farms in Geok-Tepinskiy and Bayram-Aliyskiy rayons -- 2.8-3.1 specimens; on alfalfa fields -- 0.1-1.7; in Ashkhabad Rayon -- up to 2.8 specimens; on border strips and road shoulders -- 0.1-3.1 specimens per square meter.

In 1984 the density of the winter moth is expected to reach the 1983 level, but if there is a cold and damp spring the pest can pose a serious threat to the cotton seedlings.

In 1983, 38,500 hectares were treated against the winter moth. The carrying out of a campaign against the winter moth in 1984 has been planned taking into account the frequency rate on an area of 40,000 hectares.

Spider mite. Last year this pest caused no undue alarm on the cotton plants or other agricultural crops. However, following a favorable wintering period and a cool and damp spring, the mite can cause considerable harm to cotton plants and other agricultural pests in 1984.

In order to prevent a strong spread of this pest, it will be necessary to carry out preventive treatment measures in the spring in a timely and high quality manner and in order to delay an early migration of the mite to cotton seedlings -- to increase the number of treatments carried out against weeds.

Aphids and thrips. The dry spring created unfavorable conditions for the development of aphids and thrips. Aphids appeared on the cotton plants during the 1st 10-day period in May. The infestation of fields in Ashkhabad and Mari oblasts amounted to 3-20 percent, in Chardzhou -- 15 percent and in Tashauz Oblast -- 18 percent. The degree of colonization -- weak. The rather hot weather during the summer coupled with an insufficient amount of moisture brought about a reduction in the number of aphids and thrips.

The thrips began to appear during the 2d 10-day period in May. The infestation of cotton plants by them was negligible. However, such infestation in Chardzhou Oblast amounted to 25 percent (on some farms the centers of infestation reached 100 percent with a weak degree of colonization); in Ashkhabad Oblast the infestation of vegetable crops during May reached 30-50 percent, with weak and average degree of colonization.

The autumn inspection revealed an active status for the aphids in weeds and vegetable crops. Centers of infestation were observed having a high density: up to 50-170 specimens per plant. Thrips were observed on an individual or isolated basis.

If favorable ecological conditions develop in the spring, coupled with cool and damp weather, the degree of harm caused by the aphids and thrips may increase.

In 1983, of an area of 6,500 hectares infested with aphids and thrips, 5,800 hectares were treated. The plans for 1984 call for 40,000 hectares to be treated against a complex of suctorial pests.

Crown rot. As a result of the dry spring, this disease spread extensively during 1983. Centers of this rot were observed on cotton seedlings during the 2d 10-day period in May. The damage to cotton plants did not exceed 10 percent and the destruction -- 0.2 percent. The maximum degree of damage was observed in Mari (14-32 percent and destruction -- 3 percent) and in Tashauz (40-64 percent, destruction -- 2.7 percent) oblasts.

The timely carrying out of agrotechnical measures improved the status of the seedlings and promoted the termination of the disease.

In 1984, assuming the spring period is marked by cool and damp weather, the rot will also be observed on cotton seedlings.

Bacterial blight of cotton. This bacterial disease was observed in all phases of its manifestation (cotyledonous, leaf, stalk and boll) last year on cotton seedlings and yet there was no mass spread of the disease. Bacterial blight of cotton appeared in the case of the cotton varieties 133 and Ash-25 commencing the 3d 10-day period in May. In Ashkhabad, Mari and Chardzhou oblasts the infestation ranged from 2 to 30 percent, with a weak or average degree of manifestation.

In 1984 the degree of appearance of bacterial blight of cotton will depend upon the quality of chemical disinfection of the seed and also upon proper observance of the agrotechnical measures.

Alfalfa pests -- alfalfa weevils and siton, alfalfa bug, winter moth caterpillars, alfalfa and gamma moth, phlegethon beetle, darkling beetle, aphids and thrips. However, treatments were carried out on alfalfa fields only against the weevil and siton, since the remaining pests were of no economic importance.

The density of the weevil per square meter was 3 beetles and 5 larvae, siton -- 1.8 to 9 beetles.

At the end of May, the alfalfa weevil and siton entered heat torpor. And in September they left their sheltering areas and commenced feeding and development. The pests were noted in November and early December and continued to lay eggs.

During the autumn inspection the density of the pest was high and reached 12-19 beetles per square meter.

The plans for 1984 call for treatments to be carried out on all of the alfalfa sowing areas in view of the fact that no reduction is expected in the number of pests. The plans call for 130,000 hectares to be treated.

Vegetable-melon crop pests: for cabbage -- cabbage white butterfly, cabbage moth, cabbage aphid. The degree of infestation ranges from 12 to 50 percent, density -- up to 2 specimens per plant. The damage caused by the mole cricket to cabbage on individual fields in Ashkhabad Oblast reached 35-40 percent and destruction of plants -- 7-10 percent. For tomatoes -- gamma moth and boll worm. The degree of infestation ranged from 2 to 32 percent, density -- up to 20 caterpillars per 100 plants and in some areas in Ashkhabad and Mari oblasts the contamination reached 80 percent and the density -- up to 45 caterpillars per 100 plants. The winter moth also damaged tomatoes and its density reached 4 specimens per square meter. For cucumbers -- spider mite, aphids and thrips, with a weak degree of colonization (not more than 4-8 percent).

In Ashkhabad and Gyaurskiy rayons in Ashkhabad Oblast, the whitefly was observed on outdoor tomatoes. The infestation of tomatoes at the Sotsializm Kolkhoz reached 90 percent in some areas, with a strong degree of colonization. The infestation of cucumbers in hothouses reached 75 percent and tomatoes -- 100 percent. The degree of contamination was weak in Gyaurskiy Rayon.

During the autumn inspection, pests were observed on late cabbage and tomatoes which were continuing their development. The number of pests which entered the wintering phase was high and in 1984 no reduction is expected either in their spread or overall number. The treatments for 1984 must be planned for all of the sowing areas on an as needed basis.

Vegetable crop diseases -- wire stem of potatoes and cabbage and downy mildew of cucumbers were observed in a weak degree of manifestation. The damage by wire stem was noted only on individual fields and it reached 35 percent, but also to a weak degree.

Assuming favorable weather conditions, the vegetable crop pests and diseases are expected to appear on a mass basis during 1984. The timely detection of the pests and the use of protective measures will serve to reduce their numbers. Correct chemical disinfection of the seed will reduce the manifestation and spread of the vegetable crop diseases.

Apple worm is the principal pest of a fruit-bearing orchard. A maximum degree of apple tree contamination was observed in June and July 1983 and reached 100 percent, fruit -- up to 60 percent.

At the Tedzhen Sovkhoz in Tedzhenskiy Rayon, a sharp reduction was achieved in the number of worms last year through the use of special traps.

During the autumn inspection, further development of the apple worm was noted in all of the republic's fruit-bearing orchards. The pest emerged from wintering with a great density: up to 18-41 caterpillars per tree trunk.

The numbers of this pest are not expected to decrease in 1984. Thus a requirement exists for making extensive use of special traps or systematically treating the orchards during the best periods, especially those where the campaign against the pest is being carried out on an irregular basis.

In addition to the apple worm, the following pests were noted in the orchards: mites, bugs and scale insects. Carpenter moths represent a great threat to the fruit-bearing orchards, the density of which, just as in the past, is high at the Fruit Sovkhoz imeni Kalinin (Vanovski Orchard).

Clasterosporium infection of fruit has spread extensively among the trees in orchards in all areas. The degree of infection has ranged from 12 to 42 percent.

With a sharp change in temperature during 1984, the disease could progress and spread to a severe degree.

All of the farms must carry out a timely inspection aimed at uncovering the agricultural pests and diseases. Biological measures for combating these diseases are effective during the initial stage in the development of the insects.

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TILLING AND CROPPING TECHNOLOGY

REPORT FROM CONFERENCE ON INCREASING WHEAT PRODUCTION

Kiev SIL'S'KI VISTI in Ukrainian 26 Apr 84 pp 1, 3

[Article by SIL'S'KI VISTI correspondent Ye. Hotsuyenko: "Boosting Procurement of Strong and High-Value Wheat Varieties: Notes From Republic Scientific-Practical Conference"]

[Text] A republic scientific-practical conference was held at the Ukrainian Scientific Research Institute of Irrigation Farming, which examined problems of improving quality of food grain and increasing procurement of strong and high-value wheat varieties. The conference, attended by managers and specialists from farms, oblast and rayon agricultural administrations, procurement organization officials, and scientists, was officially opened by V. P. Sytnyk, head of the agroindustrial complex department of the UkSSR Council of Ministers Administration of Affairs. Reports were presented by UkSSR Minister of Agriculture M. V. Khorunzhiy and UkSSR Minister of Procurement I. I. Shmatolyan.

Recommendations were adopted, aimed at sharply improving the quality of winter-wheat food grain this year and in subsequent years.

Prior to discussing important problems, the conferees visited the fields and laboratories of the scientific research institute.

Considerable experience has been amassed in this republic in growing and procurement of high-quality food grain. The kolkhozes and sovkhoses of Simferopolskiy Rayon, Crimean Oblast, posted procurement figures of 14,400 tons of strong and high-value wheat varieties in last year's difficult weather conditions. Krasnogvardeyskiy, Pervomayskiy, and Saksikiy rayons met the plant target for purchases of such grain. Good performances were achieved in Novomoskovskiy, Magdalinovskiy, and Tsarichanskiy rayons, Dnepropetrovsk Oblast, where strong-wheat production targets were overfulfilled.

The valuable experience and know-how, however, is not yet being adequately disseminated. In recent years the plan pertaining to procurement of strong and high-value wheat varieties has not been met for the republic as a whole. Failing to meet production targets on this high-quality agricultural product, each year farms lose 16-17 million rubles net profit. The reasons for this situation lie first and foremost in violations of process discipline and insufficient responsibility on the part of managers and specialists for filling state orders.

The farms of Nikolayev Oblast, for example, are in the most favorable zone for growing high-quality winter wheat. But in the last three years the farms in this oblast have been able to achieve procurement figures of only approximately 1,500 tons of such wheat. One reason for this poor performance is the fact that last year's winter crops received inadequate mineral fertilizer application, while the foliar top dressing target was met by only 40 percent.

Contrasts in quality of the winter wheat are particularly striking. While in Odessa and Crimean oblasts the percentage share of high-quality winter wheat sold to the state is 43 and 33 percent respectively, in Kherson Oblast the figure has recently declined to 5.5 percent.

As was stressed at the conference, measures have been formulated in this republic to boost production and state procurements of food grain and to improve its quality. They define the place and role of specialists and managers of the agroindustrial complex as well as scientists in the campaign to revive the fame of Ukrainian grain. The councils of agroindustrial associations, agricultural and procurement agencies should rigorously monitor progress in meeting targets and coordinate the efforts of all partners involved, in order to achieve a substantial end result. The steppe oblasts, as well as certain rayons in Kharkov, Poltava, Cherkassy, Vinnitsa, Kiev, and Khmel'nitskiy oblasts are the most favorable zone in this republic for growing strong and high-value wheat varieties. This zone should meet requirements in high-quality food grain. A turning point in attitude toward growing strong and high-value wheat varieties, it was noted at the conference, should be effected this year. Calculations indicate that existing winter crop acreage and the state of the crops, with implementation of an aggregate of cropping techniques, make it possible to fill state orders pertaining to procurement of high-quality food grain.

Procurement targets for strong and high-value wheat varieties should be adjusted for each rayon, taking into account the condition of the winter crop. It is important not to make last year's mistakes and to ensure that all winter crop acreage is properly cared for right up to harvest time. In order to determine yield potential in strong and high-value wheat varieties, all crop stands should be thoroughly surveyed, figuring variety composition, predecessor crops, and amount of fertilizers applied. Work on acreage where there is a possibility of producing high-quality grain should be closely monitored and be performed in a reliable and consistent manner. Agricultural services must take all steps to protect the crops.

Timetables and modes of harvesting the crop are very important. In order not to lose valuable grain qualities, on acreage where, according to survey data, grain meets strong and high-value variety standards, the grain should be harvested at full maturity, separately from other tracts, for the most part by direct combining. Cutting and threshing of high-quality wheat stands must be accomplished in not more than 2-3 days. This grain should also be kept separately in the barn.

Working groups of specialists and procurement people from agroindustrial complexes should already commence with purposeful work on organizing protection of

crops against pests, fertilizer application, and preparations for harvesting and storing the crops. It is important to ready in a reliable manner the facilities and equipment of kolkhozes and sovkhozes, and procurement enterprises, focusing particular attention on ensuring uninterrupted operations of laboratories to determine grain quality.

It was emphasized at the conference that every specialist and person in procurement must keep in mind that efforts to achieve high grain quality are not a brief campaign but are one of the principal areas of their work, an urgent task both for today and for the future as well.

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TILLING AND CROPPING TECHNOLOGY

PROGRESS, PROBLEMS IN SARATOV WHEAT DEVELOPMENT

Saratov STEPNYYE PROSTORY in Russian No 4, Apr 84 pp 4-5

/Article by I.V. Gushchin, honored agronomist of the RSFSR, N.I. Germantseva, director of the Krasnokutsk Plant Breeding-Experimental Station and L.A. Germantsev, head of the Department of Plant Breeding and Seed Production: "Reviving the Fame of Saratov Wheats"

/Text/ In a decree of the CPSU Central Committee, according to a report by the Saratov Oblast Party Committee, mention is made of the fact that the oblast has lost its former glory as a producer of strong and durum wheats. The party organizations and the agronomic service have been assigned a specific task -- to restore it to the position it lost as a large supplier of high quality wheats for the country's food fund. In order to carry out this task, it will be necessary during the next few years to increase the sowing areas, improve the quality of the grain being supplied to the state, achieve fulfillment of the planned tasks and eliminate the indebtedness in the procurements of durum wheat. Towards this end, it will be necessary during the last 2 years of the 11th Five-Year Plan to supply the state with 240,000-250,000 tons of 1st class grain, and taking into account the indebtedness of past years -- twice this amount.

What reserves does the oblast have at its disposal and what tasks are deserving of special attention?

The experience of previous years reveals that high quality durum wheat grain can only be obtained in those instances where the sowings develop under the most favorable natural-climatic conditions. For example, in 1962 the oblast's durum wheat yield amounted to 12 quintals per hectare and the grain receiving points were supplied with 250,000 tons of high quality grain. At that time, high quality grain was considered to be grain having a gluten content not lower than 30 percent and a glassiness of 90 percent.

The largest quantities of durum wheat were procured at that time in Yershovskiy, Fedorovskiy and Krasnopartizanskiy rayons. At the present time, these rayons, for one reason or another, have been removed from the list of durum wheat suppliers and, naturally, the sowings of such wheat have been reduced to a minimum.

During the years of the 10th Five-Year Plan, almost all of the 1st class grain was supplied by rayons in the eastern portion of the oblast's left bank region.

The largest amounts came from Pugachevskiy, Ivanteyevskiy and Krasnokutskiy rayons -- 55, 60 and 64 percent respectively of the overall quantity sold to the state.

Almost no 1st class durum wheat grain was procured in the right bank regions. Similarly, very little grain of this type was supplied by rayons on the left bank adjoining the Volga water area.

Last year, valuable grain was supplied by only nine rayons on the left bank. The largest amounts were supplied by Perelyubskiy, Dergachevskiy, Novouzenskiy, Ivanteyevskiy and Krasnokutskiy rayons. Thus it can be stated on the basis of all available data that durum wheat should be grown in rayons on the oblast's left bank, since these appear to be most suitable for its cultivation.

In order to expand the sowings of durum wheat, it will be necessary during the coming year to transfer a portion of the seed from the right bank to rayons on the left shore.

Another reserve for increasing the sowings of durum wheat -- the unsold balances of durum wheat grain. It is known that it has value only as commodity grain. Its use within a farm for forage purposes is unprofitable. A more productive crop such as barley can be cultivated and employed successfully for this purpose. What happened last year? Of the oblast's gross yield of durum wheat, only 47,000 tons of 1st class and 94,000 tons of sub-standard grain were delivered to the grain receiving points. Roughly 68,000 tons were laid away for seed purposes. Thereafter, 262,000 tons, or 55 percent of the crop, remained for intra-farm consumption, mainly for forage.

Let us examine in particular the question of grain volume weight. In 1982 the gross yield of durum wheat grain in Krasnokutskiy Rayon amounted to slightly more than 10,000 tons. The quality of this grain was high for the most part. It met the requirements for 1st and 2d class grain in terms of glasiness, color, crude gluten content and its group. However, 1st class grain was supplied for only 15 percent of the plan. The reason -- the volume weight of the grain turned out to be several grams lower than the standard. An experiment was carried out at the Krasnokutsk Plant Breeding Experimental Station -- grain was processed on grain cleaning machines and, as a result, its volume weight was raised to 770-780 grams, which met the standard requirements for 1st class grain. Hence, prior to turning the grain over to the grain receiving stations, the kolkhozes and sovkhoses must ensure that it is thoroughly cleansed of all weeds and impurities. The agronomists and the leaders of farms and RAPO's /rayon agroindustrial associations/ must monitor the situation in a systematic manner and uncover the reasons for reductions in the quality of the grain and eliminate these factors during the procurement process. Only in this manner will it be possible to achieve an increase in the marketability of durum wheat from 45 to 80-90 percent.

A factor of considerable importance is that of achieving improvements in cropping power. For example, last year the average cropping power for durum wheat in Krasnokutskiy Rayon was 10.9 quintals per hectare. The Chkalovskiy Sovkhoz obtained 15.9 quintals per hectare from an area of 1,366 hectares, the Krasnyy Oktyabr' Sovkhoz -- 16.7 quintals from 1,047 hectares and the Krasnokutsk Plant Breeding-Experimental Station -- 22 quintals per hectare from 497 hectares.

We consider it necessary to discuss in some detail the technology for cultivating high quality durum wheat grain at the station's semkhoz /seed farm/. It occupies 20 percent in the grain crop structure. Its high proportion is explained by the fact that the station carried out seed production work using the Krasnokutka 6 variety, the original variety.

The durum wheat sowings are planted following winter crops, chick peas and corn. Chick peas are considered to be one of the best predecessor crops; they ensure high gross yields of grain for this crop. Thus in 1982 the durum wheat yield following chick peas amounted to 16.3 quintals per hectare, compared to an average farm yield of 14.7 quintals and in 1983 the figures were respectively 25.7 and 22.0 quintals per hectare. Winter crops grown following well fertilized fallow and corn are practically identical predecessor crops for durum wheat. But since the forage crops on farms throughout the oblast have been assigned to individual specialized crop rotation plans and chick peas are not being sown, the only acceptable predecessor crop for durum wheat continues to be winter crops grown following fallow. In arid rayons, the crop under study is especially sensitive to a deficit of moisture and thus the accumulation of moisture out on the fields in behalf of the sowings is considered to be a most important task. More extensive use must be made of the non-mouldboard cultivation method, especially following winter crops. The stubble is retained and this in turn promotes the retention and accumulation of snow. On fields that have been tilled using sweeps, the amount of active moisture in the metric soil layer prior to the spring sowing increases by 10-15 percent compared to mouldboard plowing. This is manifested especially clearly during dry years. Following chick peas and corn, the fields must be plowed to a depth of 25-27 centimeters.

Durum wheat responds to mineral fertilizers. We apply them in the autumn during the principal plowing at the rate of 40 kilograms of phosphorus and 30 kilograms of nitrogen per hectare and also 20 kilograms of phosphorus per hectare in the spring when sowing in rows. The fertilizers raise the yields and increase the protein and crude gluten content in the grain. In behalf of last year's crop, 50 kilograms of superphosphate were applied in the autumn to the durum wheat fields and 100 kilograms of nitro ammophoska were applied in the spring together with the seed.

The sowing norm exerts a great amount of influence on the quality of the grain. An increase in the sowing norm over and above the optimum figure, under conditions of insufficient moisture, leads to a reduction in the indicator for grain volume weight. The optimum sowing norm for durum wheat for the Volga region is 2.8-3.0 million germinative seed per hectare. Such is the amount which should be sown at the station's semkhoz.

A delay in the carrying out of the sowing schedules results in a reduction in yield. Last year provided a clear and convincing example of this. The spring period was early, rapid and steady. Durum wheat was sown at the station from 15 to 17 April, that is, during the first 5 days of the field operations. On a majority of the farms -- from 25 to 30 April -- after which the sowing of barley and soft wheat was completed. And naturally a sharp reduction took place in the field germinative capacity, the productive bushiness, the survival rate of the plants and in the grain content in an ear and in the final analysis this affected the cropping power.

The fields must be free of weeds. An increase in cropping power is associated with a high culture of farming. The durum wheat sowings at the station are not contaminated by weeds and thus do not require treatment with herbicides; these problems are being resolved using agrotechnical methods. During the tillering phase or at the commencement of the stem extension stage on the farms, owing to a high degree of weediness, the sowings must be treated with herbicides -- amino salt 2.4-D in a dosage of 0.7-1.0 kilograms per hectare of active agent in a mixture with 3-5 kilograms of ammonium nitrate.

Considerable importance is being attached to observing the harvesting technology. The rates for carrying out this work on the farms quite often are not in keeping with the ripening rates for the grain crops and thus the durum wheat is placed in a disadvantageous position. Either it is left standing too long or, once cut down into windrows, it is left waiting too long to be picked up thus losing its marketable appearance and technological qualities. Therefore the harvesting of durum wheat should be planned in a very thorough manner, with no pauses being allowed to take place between the cutting down and picking up of the windrows.

As borne out by the operational experience of Stavropol and Krasnodar krais, organizational measures play a great role in the matter of increasing the procurements of high quality durum wheat grain. The procurements of strong wheat increased here from 0.3 to 70-75 percent using the same varieties of winter wheat.

In the interest of stimulating the production of buckwheat and millet and in addition to increasing monetary payments, mixed feed is being sold to the farms proportional to the products procured. This method could prove to be useful in connection with increasing the production of high quality durum wheat grain.

In recent years the workers attached to grain receiving points have been receiving bonuses for having fulfilled their procurement plans for durum and strong wheats. But the kolkhozes and sovkhoses also play a decisive role in the matter of increasing the production of durum wheats. Of the total amounts of money received by the farms for the quality of the grain, individual bonuses should be granted to those individuals who participated directly in the production of durum wheat. This raises their interest and to a large degree it will contribute to the retention of high quality in the grain during both the harvesting of the grain and its processing on a threshing floor.

All high quality grain is now being classified as being of 1st grade quality. But once again we must differentiate between the classes of grain. In 1977, when bonuses were called for in connection with the quality of durum wheat, the bonus for 1st class was increased from 65 percent to 100 percent, for 2d class -- from 40 to 70 and the bonus for 3d class grain remained the same -- 20 percent. Obviously there was good reason for this. The grain of 3d class durum wheat with 22 percent gluten is only conditionally suitable for the macaroni industry. In order to obtain good macaroni, flour from 1st class grain must be added.

Strong and valuable wheat must not be combined and this applies even more to 1st and 3d class durum wheat, which differ sharply in terms of their technological qualities and also in terms of price.

Appropriate corrections must be introduced into the statistical reports: when evaluating the operational results of the farms and the issuing of incentives, the quality of the grain should be pointed out and the grain should be taken into account separately according to classes.

There is still one other consideration. In the case of farms and rayons which must supply the state with durum wheat, their grain plans should ideally be considered as having been fulfilled only if they have satisfied completely the requirements for durum wheat.

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TILLING AND CROPPING TECHNOLOGY

PLANT VARIETAL DEVELOPMENT PROSPECTS DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 28 Apr 84 p 2

/Article by V. Fofanov, agronomist: "Recommended by the Plant Breeders"/

/Text/ Improvements in cropping power and cropping power stability are greatly dependent upon the dynamic replacement of obsolete varieties and hybrids which are still in cultivation by more improved types. These should be types which compensate more completely, in the form of increases in yields, for the mounting expenditures for the intensification of farming, which resist adverse weather conditions to a better degree and which are damaged to a lesser degree by diseases and pests. These and other requirements with regard to the productivity level of a variety, its quality and its suitability for the modern technologies for cultivating, harvesting, transporting and storing products are increasing with each passing year.

The results of an annual competitive examination of new varieties and hybrids and also other equally important problems concerned with plant breeding and seed production, the solving of which will be of assistance in successfully carrying out the tasks of the country's Food Program, were examined recently in Moscow during a regular meeting of the State Committee for the Strain Testing of Agricultural Crops.

What new developments are being proposed by the plant breeding centers and stations, the VUZ's and NII's /scientific research institutes/ and other scientific institutes? What varieties and hybrids are being employed to augment and enrich the grain fields and feed lands, plantations of technical and vegetable crops, orchards and berry patches?

But let us consider first of all our daily bread. It was pleasant to note during the meeting that rye is regaining the positions it lost earlier. Its modern varieties, with their shorter and more lodging resistant plant stands, are almost not inferior to and quite often even surpass in terms of cropping power other cereal grains, as they furnish 30-40 quintals of grain per hectare.

The family of low-growing high yield rye varieties such as Chulpanov, Voskhodov, Bel'ty and others has been augmented this year by such rye varieties of the same height as Pukhovskoy and Sarganovkoy, which at strain testing stations in Belorussia furnish no less than 43-44 quintals of grain per hectare and also Orlovskoy-9, which during the years of testing furnished 37.7 quintals. By

surpassing the replaced varieties in terms of cropping power by 3-4 quintals, these varieties, similar to the frost-resistant Korotkostabel'naya-69 variety which was regionalized for the very first time in Krasnodar Kray and Novosibirsk Oblast, will make it possible in the near future to increase the proportion of low-growing winter rye sowings up to two thirds of their overall area in the country.

The well known Chulpana-1 variety provides a fine example of the results to be expected from replacing tall-growing and usually lodging rye varieties with varieties having a reduced amount of straw and lodging-resistant even in the face of abundant amounts of ears. Providing a generous return in the form of yields for fertilizer used, it lowers overall expenditures by almost one fourth compared to the usual lodging rye and particularly during harvest operations.

Considerably prior to shifting over to the rye fields, radical changes took place in the varietal palette for the principal cereal grain -- winter wheat. Many recall the triumphant appearance on the scene of the celebrated Bezostaya-1 variety. Similar to the Mironovskaya-808 variety, it is still being grown on millions of hectares and it serves as a valuable source for the breeding and creation of dozens of new varieties. Obviously not all of them, and particularly the short-stalk winter wheats with genes of dwarfness borrowed from the relatively low-protein and heat-loving Norin-10 spring wheat, are capable of forming grain of the required quality. Thus, of 11 regionalized winter wheats of the semi-dwarf type, only Obriy and Zirka of Odessa breeding furnish strong grain and valuable grain -- only Krasnodar Semidwarf, Odessa Semi-dwarf and the presently regionalized Alma-Ata Semi-dwarf. Thus it is by no means an accident that many semi-dwarf wheats, upon which great hopes are being placed, are still being grown on only slightly more than 1.5 million hectares throughout the country. Varieties of the Bezostaya-1, with its lower plant stand, are being introduced into production operations more successfully. They are now being sown on almost one third of the winter wheat fields. It is now being revived in the form of 12 varieties. Among them the Korall Odesskiy durum wheat, regionalized in Nikolayev and Kherson oblasts, stands out in particular on the basis of grain quality.

In essence, the scientists have created a new cereal grain for our areas. In the varieties bred by them, success was achieved in combining factors which at first glance appear to be incompatible -- the properties of winter wheat, mainly its high productivity and to a certain extent its winter hardiness, with the fine quality and protein level peculiar only to durum spring wheat. While surpassing by several times the cropping power of spring durum wheat, which because of its low productivity is being grown very little in the southern part of the country, they are inferior by only several quintals to the varieties of winter soft wheats being grown in the southern oblasts of the Ukraine, Moldavia, in Krasnodar Kray and in Rostov Oblast.

In any case, the winter durum wheats grown in these zone on fallow or on irrigated arable land furnish 40-50 or more quintals of valuable grain for the production of those types of macaroni, groats and other products which are in great demand and which do not remain for very long on the shelves of stores. In short, the varieties are available, they have been regionalized and their

true worth has been determined at leading farms, at enterprises of the food industry and by the population. The task presently consists of undertaking the mass production of seed for these wheats and introducing them into operations.

At the present time, with the collectives carrying out evaluations not only on the basis of gross production but also in terms of the quality of the products, the time is at hand for reviewing the principal assortment of grain and other crops, at least in their principal zones of cultivation. Thus a large portion of the wheat grain is used for food purposes. However, as mentioned during the meeting, not all of it is suitable for the production of baked goods or other products of the desired quality. A plant breeder needs assistants -- specialists representing various profiles -- if he is to create a new variety in a rapid manner. It is more difficult for him to carry out this work today in the absence of a geneticist, physiologist, biochemist, technologist or researchers for protecting plants and the quality of the products. It is somewhat paradoxical to note that only in certain plant breeding centers, for example the Krasnodar Scientific Research Institute of Agriculture, the All-Union Plant Breeding and Genetics Institute and the All-Union Scientific Research Institute of Oil-Bearing Crops, does one find such specialists working hand in hand with the plant breeders. All-round operations commence here with the first stage in the plant breeding process -- the selection of the initial material to be used for crossing, right up until the final testing of the new variety or hybrid. In surpassing their predecessors in terms of cropping power and other important indicators, they as a rule also pass the examination in the state strain testing network and earn the recognition of the farmers.

At many of the NII's, not to mention a majority of the experimental stations, the plant breeder is still "the tailor, the reaper and the jack of all trades." The results of the annual meetings of the state committee, including this present one, clearly reveal what this leads to. For example, in recent years some alarming discussions took place at these meetings concerning the great harm being caused to crops and their quality by dangerous funguses and other diseases. And still no noticeable progress was achieved. It is sufficient to state that of the many dozens of varieties of spring wheat developed in recent years at almost 70 scientific institutes, only a few are capable of resisting successfully a number of diseases. Nor is the present competition very gratifying in this respect.

Let us be objective: the blunders are not always explained simply by a shortage of the required specialists. At twelve all-union NII's /scientific research institutes/, including institutes for flax, rice, pulse and groat crops, the plant breeding operations of which were recently analyzed, there are departments for phytopathology, entomology and immunity. Nevertheless, as reported by the chairman of the state committee M. Fedin, among the varieties turned over to them in recent years for testing there were very few which possessed a reliable genetic protection against the principal diseases.

It is known that more extensive use is being made of integrated (comprehensive) protection, including agrotechnical, biological and chemical methods, with reliance being placed mainly upon plant self-defense -- their immunity against the causative agents of diseases. In the final analysis, this is the cheapest method for protecting a crop and also the safest insofar as the environment is

concerned. This must be the main goal of the efforts being put forth by the geneticists, immunologists, entomologists and phytopathologists.

A sharp increase has taken place in recent years in the number of varieties and hybrids being delivered to the state strain testing network, without first undergoing a thorough check at the plant breeding institutes themselves. Hundreds of them are rejected during the initial years of testing. For example, all seven varieties of winter wheat turned over to the state strain testing network of the All-Union Scientific Research Institute of Corn during the past 9 years were rejected for use on the kolkhoz and sovkhoz fields. A similar fate befell nine varieties of rice developed at the Kuban SKhI /Agricultural Institute/, many varieties from the All-Union Scientific Research Institute of Flax and a number of sugar beet hybrids and varieties infected by storage rot and other diseases. Dozens of others, despite the fact that they are being regionalized, are not being used out on the fields, mainly owing to their negligible increases in cropping power. They are being maintained on strain testing plots and yet they are not experiencing production conditions. Such innovations only complicate the strain testing work and, even more important, they hinder the organization of seed production work for the more valuable and deficit varieties and hybrids. The speakers noted that in the interest of the work the requirements with regard to newly bred varieties and hybrids should be strengthened and the scientific institutes should display more responsibility for the quality of their output and for the organization of seed production operations.

Quite often the path leading to the implementation of plant breeding achievements is blocked by irresponsibility, unacceptable sluggishness and also by oblast and republic limitations. This was the case with regard to the dissemination of the Neosypayushchiysya-1 pea variety, which was developed at the Voroshilovgrad Experimental Station. This variety is well adapted for combine harvesting without losses. Owing to poorly organized seed production operations and the use of a considerable portion of the crop as livestock feed by the farms tasked with carrying out the seed production work, almost an entire decade was required for introducing this unique pea variety into operations in dozens of oblasts and autonomous republics.

This sad history might not have been recalled were it not for the fact that the incident is being repeated today in connection with the production of more productive seed for the first generation of a number of corn hybrids, although on the whole seed production for corn has improved in recent years. Sunflower hybrids, which adapt better to the industrial technology for cultivation and harvesting are being introduced into operations slower than this in keeping with the interests of the work. For example, the Soldor-220 hybrid, which has been regionalized in the Ukraine, the RSFSR and in Moldavia, must occupy more than 800,000 hectares. But at the Moldavian Selektziya NPO /Scientific Production Association/, which is responsible for producing its seed, a preference is shown for a hybrid which is not in such widespread use. Meanwhile, positive experience is available for the rapid production of thousands of tons of seed for deficit varieties of alfalfa in Kirghizia for delivery to the northern regions of the country.

Some gratifying achievements have been realized in the breeding of grain, forage and technical crops. For example, seven more midseason to early and

midseason ripening varieties have been added to almost three dozen corn hybrids of an average ripening group. They ripen more rapidly for grain purposes or they make it possible to obtain more nutritious silage with a greater proportion of ears. This includes the grain varieties Kubanskiy-311 MV and Povolzhskiy-1 TB, the regionalized in Belorussia, Lithuania and Chelyabinsk Oblast silage variety Dneprovskiy-260M and also the double use Kazakhstanskiy-5 TB hybrid, recommended for many oblasts in Kazakhstan. The assortment of varieties for the buckwheat fields is being augmented by the addition of Sumchankoy, Nektarnitay, Minchankoy, Aromatom and three other new varieties. The groat crops developed from their seed are more productive and of better quality and they are opening up new opportunities for expanding the sowings of this valuable crop.

An expansion in the areas used for highly productive non-shattering pea varieties will aid in increasing the production of plant food and feed protein. Its seed is being augmented by the new feed variety Dekabrist and also Aistom, regionalized in Belorussia, and Parusom -- in Leningrad Oblast. The production of the soybean varieties Zhemchuzhnaya, Rolina-1 and UNIOZ-1, as recommended for new regions, four varieties of fodder lupine having a raised resistance against fusariosis and also more productive varieties of alfalfa and clover will promote a reduction in the feed protein deficit.

The highly productive single-seeded sugar beet variety Industrial'naya is making an appearance out on the fields; its leaves and uniform root crops facilitate its cultivation and harvesting using the industrial technology.

The vegetable growers and orchard workers are pleased with the entire selection of vegetable, fruit and berry crop varieties developed by workers at the Moscow Agricultural Academy and the Scientific Research Institute of Horticulture for Siberia, under the direction of VASKhNIL academicians G.I. Tarakanov, I.P. Kalinina and other plant breeders.

TILLING AND CROPPING TECHNOLOGY

INCREASED ATTENTION FOR PRODUCTION OF STRONG, DURUM WHEATS

Saratov STEPNYYE PROSTORY in Russian No 4, Apr 84 pp 2-3

/Article by B.P. Martynov, RSFSR deputy minister of agriculture: "Unremitting Attention for the Production of Strong and Durum Wheats"/

/Text/ The grain problem is an important element of the USSR Food Program. The party and government have clearly defined the tasks for creating the country's food fund, including grain, and they have provided the conditions required for carrying them out.

In the gross yields and purchases of grain, a leading role is played by the chief food crop -- wheat. Its proportion with regard to the overall volume of grain procurements in the Russian Federation is 50 percent. However, this is inadequate. For more complete satisfaction of the population's requirement for an expanded assortment of baked, confectionery and macaroni products, as set forth in the Food Program, a sharp increase is required in the production and purchases of high quality durum and strong wheat grain. As is well known, the latter is capable of furnishing not only excellent bread but also of improving wheat having low baking qualities through mixing.

The Volga economic region is one of the largest suppliers of wheat grain having high technological qualities. In this regard, considerable concern is being aroused over the fact that the kolkhozes and sovkhoses in the region's oblasts and autonomous republics are systematically failing to carry out the plans for supplying the state with strong and durum wheats.

The purchase volumes for non-graded durum and valuable soft wheats are inadequate.

Some farms, and at times entire rayons, have eliminated almost entirely their sowings of durum wheats. Saratov Oblast was completely unjustified in yielding its positions. Last year the plan for purchasing durum (1st class) wheats here was fulfilled by only 21 percent.

The farms in Volgograd Oblast have not coped with their 3 year plans for supplying strong wheat and for all practical purposes they did not sell any durum wheat grain. During the first 2 years of the 11th Five-Year Plan, Kuybyshev Oblast succeeded in mastering only 1.5-18 percent of its plan for strong wheats and 2.8-31 percent of its plan for durum (1st class) wheats.

Penza and Ulyanovsk oblasts did not turn over any strong or durum wheat grain whatsoever.

The principal reason for this situation, as noted above, was the sharp reduction in the areas made available for wheat, including durum wheat, and the absence of responsibility among the leaders of the oblasts and autonomous republics for carrying out the established plans. For example, let us take the Annenkovskiy Sovkhoz in Tsilninskiy Rayon, Ulyanovsk Oblast. Although it had a plan for purchases of 1,100 tons of durum (1st class) wheat, it did not cultivate this crop over the past 3 years. The Sovkhoz imeni Krupskaya in Melekesskiy Rayon, with a plan for selling 6,000 tons of durum (1st class) wheat grain to the state, or 55 percent of the all-rayon plan, also did not sow this crop over the past 3 years. And overall the sovkhos obtained 2.4 times less wheat than the general plan for its procurements.

All of this underscores the extremely low degree of exactingness on the part of the agricultural organs in the oblast and rayons with regard to negligent farm leaders and specialists and also the absence of a proper campaign aimed at carrying out the state tasks. In the interest of raising the gross yields, the production of durum wheats in a number of areas has been transferred from the former steppe regions of cultivation to more damp areas, where these varieties produce higher yields at the expense of the grain quality.

An analysis of the status of affairs reveals that the lack of stability in the production and purchases of high quality wheats and also the reduction in grain quality are caused to a large degree by the farms failing to follow the cultivation technology and not carrying out their sowings following clean fallow or a bed of perennial grasses, that is, following predecessor arrangements which promote a natural accumulation of nitrogen in the soil.

The regionalized varieties of strong winter and spring wheat grown at kolkhozes and sovkhoses in the region are capable of producing flour having high baking qualities. Over the past few years, new varieties of the intensive type having a protein content of from 14 to 19 percent and a gluten content of from 30 to 38 percent have been introduced into production operations. They are demanding with regard to the conditions for cultivating and forming a crop and they remove considerably more nutrients from the soil, the consumption of which is quite often not compensated by applications of the required dosages of fertilizer. In order to obtain high quality grain, proper soil fertility conditions must be created for such varieties.

A lack of attention to these matters by the leaders and specialists of local agricultural organs, kolkhozes and sovkhoses and violations of the basic agricultural practices have produced a situation wherein the full potential of regionalized varieties of intensive type wheats is not being realized satisfactorily.

Excellent results are always being achieved in those areas where the fine points of the technology for cultivating high quality wheats have been mastered to perfection and where a great amount of work is being carried out on the threshing floor in connection with the forming up of batches of strong and durum wheats. Timashevskiy Rayon in Krasnodar Kray serves as a good example

of this. In 1983 the grain growers in this rayon supplied the state with 9,700 tons of strong wheats over and above the plan and received 1,154,000 rubles additionally for the quality of the grain. On farms in Primorsko-Akhtyrskiy Rayon in this same kray, 73 percent of all wheat turned over was strong wheat.

Last year the farmers in Volgograd Oblast sowed their strong wheat following fallow and other fine predecessor arrangements. Mineral fertilizer was applied to the rows over a considerable area, tissue diagnosis was carried out and subsequently -- a foliar top dressing of nitrogen fertilizers was applied during the heading period. Measures aimed at combating the stink bug and weeds were carried out in a timely manner. In all of the rayons and on all of the farms, working groups were created for organizing the procurements of high quality grain and work was carried out on the threshing floors in connection with the forming of batches having a high gluten content. And the result -- the oblast fulfilled its plan for purchases of this grain by 123 percent. The earnings for the strong and valuable wheat turned over amounted to more than 3 million rubles.

Saratov and Kuybyshev oblasts improved somewhat the status of affairs with regard to deliveries of strong wheat grain into the state resources.

An important condition for raising cropping power and the quality of the wheat is the availability of adequate areas of clean fallow, the mastering of the crop rotation plans, improvements in the structure of the areas under crops, the applications of optimum dosages of organic and mineral fertilizers, especially nitrogen fertilizers, raising the overall culture of farming, shortening the harvest periods and combating pests and weeds.

A special danger is present on farms in the Volga region in the form of the stink bug. During years marked by a high degree of grain vulnerability to this pest, a sharp reduction is observed in the content of crude gluten in the grain and also a considerable deterioration in its quality.

In 1983, for example, according to data supplied by the State Grain Inspection, all of the wheat procured in Saratov Oblast was to some degree damaged by the stink bug. The principal campaign against this pest should be waged in the spring, during its flight from the wintering areas. A differentiated approach should be employed in treating the sowings with chemicals, with use being made of the farm specialists for carrying out this work. An inspection has revealed that many farms and grain receiving enterprises are not organizing in a satisfactory manner the work of evaluating in advance and making available for delivery the best batches of durum and strong wheat grain in terms of quality and they are not ensuring their separate delivery to the grain receiving enterprises. Quite often the formation of grain batches on the kolkhoz and sovkhoz threshing floors is carried out in a formal manner, without the participation and control of specialists attached to the agricultural or procurement organs.

When shipping the grain of strong and durum varieties, the farms at times fail to indicate the name of the variety or the field or threshing floor from which it was obtained and this complicates to an extreme degree the work of accepting the grain, determining its quality and assigning it to the grain receiving enterprises. Overall, this leads to a lack of responsibility for considerable batches of high quality wheat.

The scientific institutes are not carrying out their plans for the production and sale of seed for high reproductions. This is creating difficulties for the kolkhozes and sovkhoses in strain changing and strain renovation work and it is forcing them to sow seed for remote reproductions of the third category of varietal purity and durum wheats in a mixture with soft wheats and this in the final analysis lowers the quality of the crop.

The agricultural organs in the various areas should adopt a more critical attitude with regards to the disposition of the wheat sowings. The zone for the growing of commodity grain should offer the most favorable ecological conditions. Experience has shown that sowings of durum wheats should ideally be located on chernozem and chestnut soils.

Special attention must be given to the mandatory carrying out of an entire complex of agrotechnical measures, to the selection of the predecessor crop arrangements, to the introduction of varieties characterized by high quality grain and to the strict observance of high quality agricultural practices. In the work of obtaining high quality grain, special importance is attached to the carrying out of tissue diagnosis and foliar top dressings, chemical weed control work and to treating the sowings against pests and diseases.

Considerable importance is attached to improving the organization and technology for harvesting the crop, carrying out a preliminary check on quality, forming uniform batches of grain, introducing collective contracts into use in field crop husbandry on an extensive scale and to the issuing of moral and material incentives to those who supply high quality grain, the supplies of which are limited.

The problems touched upon in this article have been discussed repeatedly on the pages of the journal and they have been the subject of extensive discussions during zonal conferences for workers attached to scientific and agricultural institutes and kolkhoz and sovkhos leaders and specialists.

The management of the ministry is awaiting the adoption of decisive measures aimed at eliminating the existing shortcomings in the production and procurements of strong and durum wheats throughout the region and it expresses the confidence that the Volga farmers will honorably fulfill the tasks of the current five-year plan and make a worthy contribution towards carrying out the USSR Food Program.

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TILLING AND CROPPING TECHNOLOGY

FOREIGN VARIETIES OF SHORT STALK WHEAT DISCUSSED

Saratov STEPNIYE PROSTORY in Russian No 4, Apr 84 p 6

/Article by A.G. Lukancheva, candidate of agricultural sciences at the Penza Agricultural Institute: "Foreign Bred Short Stalk Varieties of Soft Spring Wheat"/

/Text For a period of 7 years (1975-1981) we studied 43 short stalk varieties developed in the U.S.A., Canada, Mexico and India for the purpose of obtaining intensive type varieties suitable for the conditions found in the oblast and also initial stock for breeding purposes. The studies were carried out at a training-experimental farm of the Penza Agricultural Institute using a VIR /All-Union Scientific Research Institute of Plant Growing/ in a six-fold replication. Our regionalized Saratovskaya 36 variety served as the standard. The diverse nature of the weather conditions experienced during the years in which the studies were carried out, ranging from acutely dry (1970, 1979) to extremely damp (1976), promoted a thorough evaluation of the materials under study.

The studies revealed that a large portion of the varieties were early ripening in nature. Their growing season was 6-12 days shorter than that of the standard. They all had short and strong haulm (shorter than the standard by 22-53 centimeters) and were absolutely lodging resistant. Even during 1976, an especially damp year when all of the domestic varieties lodged, the short stalk varieties were assigned a value of 5 points (see Table) for their degree of lodging. The ratio of the length of the ear and upper internode to the height of the plant and that of the grain to the straw is more limited.

Many of the foreign varieties were resistant to brown rust and some of them possess a group immunity to the principal fungus diseases: Verls Sidz 1809, Verld Sidz 1877, Inia 66, Naynari 60, Red River 68 and Tobari 66. However, on the average for the 7 year period, they were all considerably inferior to the standard in terms of productivity (from 3.8 to 10.0 quintals per hectare). This resulted from a lowered fullness of the shoots and plant survival rate and low weight per 1,000 grains and during dry years by lax ear and all of this underscored their inadequate plasticity, biological resistance and their adaptation to the non-irrigation conditions existing in our oblast.

The year 1978 was an exception; it was characterized by a good amount of moisture and by an adequate amount of heat. During this year, some of the

Agrobiological Peculiarities of Foreign Bred Short Stalk Varieties of Soft Spring Wheat

| Сорт (1) | (2) В среднем за 1975—1981 гг. | | | | | 1979 г. | | 1976 г. |
|---------------------------|--------------------------------|--------------------|--------------------------|--------------------------|----------------------------------|------------------------|---------------------------|--------------------|
| | полнота всхо- дов, % | выживаемость, % | масса 1000 зе- рен, г | высота расте- ний, см | отношение зерна к соло- ме | (8) бурой ржавчиной | | полегание, балл |
| | | | | | | степень, % | тип ре- акции, балл | |
| (12) Саратовская 36 (ст.) | 65,5 | 90,7 | 34,1 | 95 | 1:5 | 70 | III | 2 |
| (13) В-18 | 59,5 | 80,2 | 31,7 | 49 | 1:2,6 | 35 | I | 5 |
| (14) Верлд Сидз 180) | 60,0 | 88,2 | 35,0 | 59 | 1:2,7 | X. П.* | 0 | 5 |
| 1812 | 59,5 | 73,2 | 31,8 | 51 | 1:2,9 | 60 | I | 5 |
| 1877 | 67,5 | 82,2 | 30,3 | 55 | 1:2,8 | X. П. | 0 | 5 |
| 1889 | 61,5 | 82,2 | 29,6 | 45 | 1:2,7 | 30 | II | 5 |
| (15) Иниа 66 | 62,5 | 63,7 | 31,4 | 52 | 1:2,3 | 5 | I | 5 |
| (16) Лерма Рохо 65 | 59,2 | 82,7 | 31,4 | 51 | 1:3,1 | 30 | I | 5 |
| (17) МГ-15 | 66,7 | 77,0 | 30,3 | 73 | 1:3,0 | 40 | III | 5 |
| (18) Найнари 60 | 60,0 | 88,0 | 33,2 | 56 | 1:2,6 | X. П. | 0 | 5 |
| (19) Орофен | 55,0 | 81,7 | 30,8 | 57 | 1:3,4 | X. П. | 0 | 4 |
| (20) Ред Ривер 68 | 63,5 | 78,2 | 32,0 | 57 | 1:3,5 | X. П. | 0 | 5 |
| (21) Сайпресс | 69,5 | 81,7 | 31,2 | 83 | 1:4,7 | 60 | I | 5 |
| (22) Сл. гибрид 47857 | 63,7 | 78,1 | 30,5 | 51 | 1:3,5 | X. П. | 0 | 4 |
| 47860 | 52,0 | 79,7 | 31,8 | 69 | 1:3,2 | X. П. | 0 | 5 |
| 291014 | 66,0 | 73,0 | 33,0 | 61 | 1:3,3 | X. П. | 0 | 5 |
| 291064 | 61,5 | 79,5 | 29,6 | 51 | 1:3,4 | X. П. | 0 | 5 |
| (23) Сиете Церрос | 62,7 | 74,2 | 29,3 | 52 | 1:3,4 | 7 | I | 5 |
| (24) Тобари 66 | 57,2 | 80,2 | 32,6 | 52 | 1:2,3 | X. П. | 0 | 5 |
| (25) Шарбати Сонора | 60,0 | 81,2 | 31,8 | 42 | 1:3,7 | 60 | III | 5 |
| (26) Клейн Люцero | 59,1 | 76,8 | 29,8 | 53 | 1:2,8 | 5 | I | 5 |
| (27) Сан Мартин | 54,7 | 72,2 | 28,8 | 51 | 1:2,5 | 8 | I | 5 |
| (28) Каразинно | 61,3 | 69,8 | 30,2 | 61 | 1:2,9 | 15 | I | 5 |

(29) * X. П. — хлоротические пятна.

Key:

- | | |
|-------------------------------------|--------------------------------|
| 1. Variety | 16. Lerma Rokho 65 |
| 2. Average for 1975-1981 | 17. MG-15 |
| 3. Fullness of shoots, in % | 18. Naynari 60 |
| 4. Survival rate, in % | 19. Orofen |
| 5. Weight of 1,000 grains, in grams | 20. Red River 68 |
| 6. Height of plants, in centimeters | 21. Saypress |
| 7. Ratio of grain to straw | 22. Sl. Gibrad 47857 |
| 8. Infection by brown rust | 23. Siyete Tserros |
| 9. Degree, in % | 24. Tobari 66 |
| 10. Type of reaction, in points | 25. Sharbatl Sonora |
| 11. Lodging, in points | 26. Kleyn Lyutsero |
| 12. Saratovskaya 36 | 27. San Martin |
| 13. V-18 | 28. Karazinno |
| 14. Verd Sidz | 29. * C. . -- chloritic spots. |
| 15. Inia 66 | |

short stalk varieties defomote;u sirxassed tje stamdard (Saratovskaya 36-36.6) in terms of cropping power: V-18 (India) -- by 1.1; Verld Sidz 1812 (U.S.A.) -- by 1.5; Verld Sidz 1889 (U.S.A.) -- by 1.6; Inia 66 (Mexico) -- by 1.2; Red River (U.S.A.) -- by 2.2; Slozhnyy Gibrad 291014 -- by 1.7; Siyete Tserros (Mexico) -- by 1.8 quintals per hectare.

What were the results of the experiment carried out on the fields at the training-experimental farm of the Penza Agricultural Institute?

The studies carried out permit the conclusion to be drawn that the foreign bred short stalk varieties of soft spring wheat which were studied are of no value with regard to their being grown under non-irrigation conditions in Penza Oblast. However, it is acknowledged at the same time that they possess unquestionable virtues and can be sown in zones characterized by good moisture or under irrigation conditions. In addition, they can be utilized successfully as donors for short stalk development, early ripening and resistance against fungus diseases and lodging in the breeding of intensive type varieties.

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TILLING AND CROPPING TECHNOLOGY

ATTENTION DIRECTED TO GRASS SEED SITUATION

Kiev SIL'S'KI VISTI in Ukrainian 25 Apr 84 p 1

[Article by V. Zayets', chief agronomist, department of grass seed production, UkSSR Sortsemprom Republic Production Association: "Attention Toward Seed Plots"]

[Text] Measures have recently been taken in this republic which are directed toward improving perennial grasses seed production. In particular, a number of specialized farms have been established, and their facilities have been improved. New varieties of grasses and growing techniques are being adopted. There has been a substantial increase in acreage of grasses planted for seed, and planting is employing the wide-row technique. Today more acreage is being planted to such promising red clover varieties as Atlas and Skif-1; Nadiya, Rayduha, and Zirnytsya alfalfa. A new, self-pollinating alfalfa variety, Yaroslavna, is being introduced.

All this has produced results. In the last year, for example, production of perennial grass seed has increased by 47 percent for the republic as a whole. Production has been triple the plan target on the farms of Zhitomir, Sumy, Cherkassy and Chernigov oblasts.

Many oblast interfarm seed stations have substantially increased the extent of seed production. Excellent results were achieved in Kiev, Cherkassy, Transcarpathian, Chernovtsy, Sumy, Chernigov, and certain other oblasts, where plan targets were significantly overfulfilled. Stations in Kherson, Khmelnytskyi, Zaporozhye, and Voroshilovgrad oblasts performed below their capabilities -- accounting for only 8-14 percent of seed produced, while the figure is 22 percent for the republic as a whole.

As is indicated by the results of the spring inspection, 93 percent of seed grass stands are in good and satisfactory condition. In those oblasts where adverse weather conditions caused loss of part of the seed grass, it is essential (to make up for the loss) to assign to seed production the best production acreage and to plant with the wide-row technique, without undersowing. This will make it possible to obtain seed this year. In assigning legume-crop acreage it is necessary to select fields with high soil fertility, close to woodlands, forest strips, erosion gullies, and acreage where there are many natural pollinators. In recent years specialized farms have not been making assignment allocations for seed crops, as in the past, but have been specifying dedicated acreage. This has made it possible to carry out all crop care

measures: fertilizer application, subsurfacing, knife-coulter tilling, and application of chemicals to combat pests, plant diseases and weeds.

Allocation of perennial grass seed stands on this republic's kolkhozes and sovkhozes is characterized by the following figures (as a percentage of the plan target):

| | |
|-----------------|-----|
| Ternopol | 100 |
| Chernovtsy | 99 |
| Nikolayev | 89 |
| Poltava | 89 |
| Zaporozhye | 80 |
| Dnepropetrovsk | 79 |
| Ivano-Frankovsk | 76 |
| Kharkov | 73 |
| Voroshilovgrad | 67 |
| Zhitomir | 66 |
| Rovno | 66 |
| Donetsk | 65 |
| Kherson | 63 |
| Kirovograd | 62 |
| Vinnitsa | 57 |
| Transcarpathian | 54 |
| Lvov | 49 |
| Chernigov | 46 |
| Kiev | 39 |
| Crimean | 39 |
| Khmelnitskiy | 36 |
| Volyn | 32 |
| Cherkassy | 32 |
| Odessa | 19 |
| Sumy | 7 |

As we see, the kolkhozes and sovkhozes of Sumy, Odessa, Cherkassy, Volyn, Khmel'nitskiy, Crimean, and Kiev oblasts are late in allocating seed plots, where allocated acreage is running 7-39 percent of the plan target. The situation is no better as regards alfalfa seed plots. The farms of Odessa, Cherkassy, and Crimean oblasts have allocated 18-39 percent of the targeted acreage.

The councils of oblast and rayon agroindustrial associations should take immediate steps to speed up the process of meeting plan targets for allocating seed plots on each kolkhoz and sovkhoz, with rigorous verification that this acreage is being utilized as intended. This will make it possible to obtain high and stable perennial grass yields.

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TILLING AND CROPPING TECHNOLOGY

BRIEF

ANNUAL VASKHNIL MEETING--Kiev, 28 Apr--The annual meeting for scientists attached to the Department of Field Crop Husbandry and Plant Breeding of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/ was held at the Mironovka Scientific Research Institute of Plant Breeding and Seed Production for Wheat. A meeting of the Department of Mechanization and Electrification of Agriculture took place at the Ukrainian Scientific Research Institute for the Mechanization and Electrification of Agriculture. The participants in these meetings defined the tasks flowing out of the decisions handed down during the April (1984) Plenum of the CPSU Central Committee and the All-Union Economic Conference on the Problems of the Agroindustrial Complex. Methods were outlined for raising the effectiveness of scientific studies concerned with intensifying the grain economy, plant breeding and the quality of field crop husbandry products and also with the all-round mechanization and automation of agricultural production. The deputy minister of agriculture for the USSR B.A. Runov, the vice-president of VASKhNIL V.A. Kubyshev, academician-secretary of VASKhNIL V.S. Shevelukha and G.Ye. Listopad participated in the work of these meetings. /by S. Luzgan/
/Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 29 Apr 84 p 3/ 7026

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END